SPATIAL BEHAVIOURS AND SPATIAL ATTITUDES IN A COMMUNITY OF FEMALE ADOLESCENTS

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C O N T E N T S

ABSTRACT

The intention of this study was to investigate whether an individual's spatial behaviours could be related to the attitudes which that individual expressed about environmental and interpersonal space. It was considered that both attitudes and overt spatial behaviours might be determined by the rationale accorded to specific spatial distances by a culture. Consequently a cross-cultural approach was adopted. However, as on-going spatial experiences might affect spatial behaviour and attitudes, two groups were selected who shared a common spatial environment. As past spatial experience might also significantly influence spatial responses, the study included the collection of information about the amount of space to which a girl had been accustomed. Maori and European adolescent girls were the subjects chosen for this particular investigation. The experimental work was carried out in a shared spatial area in the current natural environment of the subjects.

The study showed that cross-cultural variation in spatial behaviour and attitudes existed but that this might be attributable to varying degrees of loss of a cultural rationale. There nevertheless appeared to be a relationship between spatial attitudes and behaviour. In terms of interactional distances this seemed to be culture-specific and an attempt to cope in a culturally-shared way with interpersonal situations. In terms of environmental space, spatial attitudes probably arose from personal needs, some of which may have been dictated by past spatial experiences.

Despite the limitations of this study, it does appear to have developed a viable approach for the investigation of human spatial needs and behaviour. By indicating areas where further research is needed and by presenting an hypothesis of the interrelationship between cultural integration and the meaning of space, it may contribute to an advance in this research area.

'.....I think it is important to know why we are at this point in history engaged in this particular enterprise'. Margaret Mead, 'Vicissitudes of the study of the total communication process', in ed. Sebeok, Hayes and Bateson, 1964, 'Approaches to Semiotics'.

1. INTRODUCTION

When one begins to investigate in detail that area of social psychology most commonly called non-verbal communication, one is confronted by an amorphous and frequently conflicting field of research work. Part of the reason for this lies in the nature of the divergent influences behind the research; part is simply explained by the fact that research into non-verbal behaviours progressed at a rate which outpaced supporting definitions. Moreover, it evolved as a multidisciplinary study, and although researchers in the various disciplines have drawn inspiration from concepts derived from the related areas, the unity of the research is still far

from attained.[1]

The mounting interest in non-verbal behaviours appears to have been promoted in the first place by a desire to find a 'genuine', untainted level of expression. While such a desire is in essence utopic, it may nevertheless be an articulation of the alienation felt by many individuals within modern societies. It is indeed natural enough that non-verbal behaviour should be construed in this way, for the human being has developed out of a stage in which he felt a unity, or was unaware of a division, between himself and his communication. That was in his pre-verbal years, which could be considered par excellence the 'age of non-verbal communication'. The second current feeling which has undoubtedly lent momentum to the non-verbal communication 'movement', particularly in the area of spatial responses, is the growing awareness of over-

1. It was still possible, for example, for Barash, 1973, to admit that as an ethologist he had been unaware of the work carried out by social psychologists investigating spatial behaviours.

population. Patterson (1968) had indeed commented that 'One might expect that investigations of macro-space and even micro-space, will be accelerated as available space decreases with population growth'. The increasing concern that the amount of individual space is shrinking is moreover at times accompanied by an insidious, almost poignant, feeling of having lost one's volition, that the pressures to which one is subjected lead to innovative and adaptive adjustments which may be indifferent to ethics and morality.

This latter comment, despite its speculative quality, epitomises the fluctuating consciousness with which man reflects upon his own behaviours. He feels that he is choosing by virtue of those ideals against which he believes he balances his judgement before he reacts; at other times he may feel that he is constrained by both internal and external variables. Non-verbal behaviours are particularly sensitive to these shifts of viewpoint, as at their best they appear to demonstrate the exquisite receptivity and creativity of man, at worst

his complete subjection to environmental contingencies.

In the course of this study we shall trace those influences which affected the direction taken and assumptions made in the area of non-verbal research proper and in the research into spatial behaviours in particular. The logic for such an approach rests on the belief that, in studying the spatial behaviour of any particular group of individuals, it is important to understand and assess the conceptual models with which previous researchers in the field have been working if one is to presume to draw from their conclusions about their research findings. Such a study must of necessity adopt a multidisciplinary approach.

2. THE HISTORICAL DEVELOPMENT OF RESEARCH INTO NON-VERBAL BEHAVIOURS (with particular attention to the growth of interest in spatial behaviours).

'At any one time a science is simply what its researches yield and the researches are nothing more than those problems for which effective methods have been found and for which the times are ready'. Boring, 'The History of Experimental Psychology', 1929.

2.i. THE STUDY OF NON-VERBAL BEHAVIOUR FROM AN HISTORICAL PERSPECTIVE.

While an interest in non-verbal behaviours, particularly in gesture and expression, existed prior to the advent of psychology as an independent discipline, that very fact, and the means by which it had previously been investigated, both exercised a certain caution over those pursuing psychology proper and exerted an influence on the way in which it would later be pursued.

Mankind has undoubtedly always shown some curiosity

about the relationship between the person and his non-verbal behaviours, but most primitive societies, as well as most of the earlier civilizations, tried to pre-determine the connection between them. By establishing codes which identified the individual's place within the total social structure and by then educating the individual as to what behavioural responses were proper to that particular social position, truly individualistic (both idiosyncratic and random) responses could be minimalized and deviant responses, when they occurred, could be, and often were, punished. Behavioural ambiguity was by this means reduced to the minimum, for the meaning attached to a particular socially prescribed behaviour was predetermined (known by the individuals of that society before making the response) so that the question of the interpretation or decoding of behaviour simply did not arise. Spatial responses were moreover by their nature particularly amenable to such a coding approach. The caste system in India was one such example of this. A person learned to which caste

he belonged and concomitantly the prescribed distances he was obliged to keep from those of other castes (Argyle, 1974). The spatial responses were moreover maintained on a rational level by the concept of contamination which fitted into the total way of thinking of that culture.

It has been suggested that one of the characteristics of primitive societies and early civilization is the relative rigidity of cultural rules. It must however be recognized that, as cultures have developed, ways of coping with the individual who is unable to follow the socially prescribed pattern of responses have also evolved. On the one hand this may mean the removal of such individuals from social participation[1] or it may lead to the allotment of a special function to them. Thus those subject to a physical and/or mental crisis involving dreams and visions and causing them to behave

1. By banishment, forms of incarceration or, alternatively, voluntary isolation. It should be noted that these are all spatial responses.

in unusual ways might be designated sharman, which while permitting a certain behavioural idiosyncracy, at the same time fitted this into the total socio-cultural framework. In this way a certain flexibility and possibility for adaptation assured the on-going maintenance of the culture and allowed for a selective and restrictive integration of new concepts and a gradual alteration and modification of traditions of response.

It seems possible, however, that the degree to which such adaptation can occur may be limited, so that, if social changes proceed at an unprecedented rate, then the rationale[1] may be disrupted. It is postulated here that this may have been what occurred in Europe beginning at the time of the Renaissance and Reformation, and which in turn led both to the development of the discipline of psychology and to the mounting interest in non-verbal behaviours.

1. By rationale is understood the total conceptual framework which underpins the society; the cultural logic.

In societies where non-verbal behavioural responses are explicit and are embedded in the total conceptual framework of the culture one may investigate the historical development of the behavioural rules, may hypothesize on the aetiology[1] and may also investigate the transition in roles and associated non-verbal responses permitted in the course of a lifetime. Such an approach leads to an anthropological or a sociological study of non-verbal behaviours rather than a psychological one. In contrast, it is suggested, the psychological approach to non-verbal behaviours grew initially out of an interest in personal motivation and causation.

The medieval period in Europe was marked by a fairly clearly structured social order based on feudalism. The gradual weakening of that hierarchical structure was closely although not exclusively related to the growth of urban areas and the accompanying evolution of a group of artisans who were no longer subject to the behavioural

1. Such hypothesizing is usually based on the reasoning expressed in mythological traditions.

requirements of the feudal order to the same degree. It was, for example, by no means coincidental that the flourishing of new ideas from the inspiration and regeneration of old ones in the late fifteenth and sixteenth centuries was centred on the Italian city states. Out of this loosening of the social structure and alteration of the social order, it appears, evolved a situation which gave a new direction to reflection and produced an inward turning of the individual. It is suggested that this was the consequence of a growing awareness of the divisibility of the individual and the society of which he was a part. When the individual and his position within society are clearly defined he may experience frustration but he probably does not experience isolation or alienation to any extent. If, however, an individual finds himself without predetermined guidelines for his behaviour his rationale for response is removed and in his search for a new conceptual basis for his behaviour may make him self-conscious (aware of himself as distinct from his social involvement). It

seems further probable that this may be intensified if the same individual cannot maintain his sense of oneness with the natural environment, for he is then exposed to a double 'cutting-loose' in that he can neither claim a clearly defined role within society nor a firm place based on an intimate relationship with the earth[1].

There are several indications that this is what occurred and that it may be more than supposition. The Renaissance and the Reformation periods were marked both by the relinquishing of artistic anonymity and by the development of forms of literary expression which were concerned with personal feelings rather than with the individual's place in society[2]. Furthermore, growing out of the changes in the total social structure and at the same time precipitating further changes were attempts to formulate a new conceptual framework for

1. This is considered to be one of the significant results of the growing urbanisation.
2. The work of the metaphysical poets exemplified this change.

existence. With the lack of an unquestioned set of social injunctions for behaviour, the individual was in the position of trying to determine the degree to which he was a free agent. This led on a theological level to the intensely heated controversies over whether an individual must be responsible for working out his own salvation and whether his behaviour was already pre-destined. That protestant position which affirmed a concept of individual salvation without ecclesiastical intermediaries and which rejected a stringent pre-destination left the individual in a position of introspecting on the condition of his soul and on what caused him to do things. It is suggested here that this was the beginning of the conceptual splitting of the reflective self and the self it is trying to observe, which in turn led to the difficulties within psychology of determining the relationship between body and mind (soul). It is further suggested that the preoccupation with personality may be directly related to the loss of a social framework, of which one is part, and be an attempt

to establish an identity (an internal coherence) and a consistency (an internal predeterminator or predestinator) to cope with the ensuing sense of instability and insecurity.

The changing climate of conceptualisation within the Western World tended to create a new set of significant questions. These were first, if the individual's behaviour is not prescribed by societal norms or codes, what did determine the nature of the individual's response? Secondly, what was the individual indicating by the response? and thirdly, what did the response indicate about the individual? It was the final question which first caught the imagination both of laymen and more scientifically orientated individuals and produced attempts to establish some means of deducing an answer. One of the early works in this area was Porta's "De humana physiognoma"[1]. The thesis of the collated "data"

1. A Renaissance work which was translated into German in 1601.

was one of naive similarity; that is, where a resemblance between the external physiognomy of a man and a particular animal could be observed, then the deduction was that a likeness in traits of the 'personality' or soul existed. Such a hypothesis, while exceedingly simplistic, was nevertheless quite distinctive from more primitive assimilative concepts, whereby identity (trait similarity) could be achieved either through eating a portion of the animal (ingested assimilation) or through the development of a special relationship with the particular animal[1]. It conformed however to the concept of imitative magic (Fraser, 1922) in that the basic assumption was that the creator of man by imitating the physiognomy of a particular animal also achieved trait likeness[2]. Despite its conceptual naivety it held appeal, for it provided a yardstick, albeit very primitive, for predicting character. It is suggested that it became increasingly

1. This was the kind of relationship found in totemistic cultures.
2. It was an example of a transitional conceptual position.

necessary to develop such tools for assessing individuals as their response could no longer be predicted in advance (nor likewise one's own response to them).

The mounting interest in physiognomy during the eighteenth and nineteenth centuries was pursued significantly by such churchmen of a protestant leaning as Lavater as well as by those of the medical profession (e.g. Carus). Lavater's concern reflected the need for a theory of an individually determined religious salvation to have some means of assessing the state of the soul but was also an attempt to establish the interaction between body and soul[1]. Initially the interest of physiognomists had been concerned with constant or static physiological features. This was however extended by Lavater to include the concept of "Pathognomik", which postulated that the actual (momentary) condition of the soul could be recognised from movements of the face and body and further that the body's movements might also alter the

1. This involved a sorting out of the Pauline dichotomy of the 'willing spirit' and the 'weak flesh'.

character of the soul[1]. A further significant concept within the field of physiognomy was that of symbolic representation (Carus spoke of the 'symbolic of the human form') which implied that there was a translation process whereby the spiritual qualities were turned into a physical form[2].

It appears possible that the study of physiognomy, as it had developed in Europe by the time of the emergence of psychology as an independent discipline and as it later continued and merged into that branch of psychology known as 'Ausdruckskunde', evolved out of the European cultural and social climate. The premises however on which it was based hindered its initial merger with the German psychophysical tradition and it had to wait for the resurgence of a stream of more philosophically oriented psychological thinking for it to be incorporated and transformed into what in the twentieth century has become

1. This could be regarded as the rudimentary beginnings of kinesics.
2. This postulate anticipated to some extent the personality theories of the type of Kretschmer and Sheldon, where a body-character-emotion alignment was proposed.

the question of the relationship between the emotions and non-verbal behaviours.

It remains true of modern research into non-verbal behaviours, however, that we are still asking the same fundamental questions that were previously delineated. The concept of non-verbal communication is directly related to the question of what an individual is indicating by his non-verbal responses. The ethological tradition and structuralism are both attempts to establish the determinants of non-verbal response. Until these questions can be answered it is doubtful whether it can be substantiated whether in fact the thesis suggested here of a cultural 'loosening' can be affirmed or rejected. This may however represent a tail-chasing exercise, since if our interest in non-verbal behaviours is related to our loss of firm non-verbal behavioural injunctions and we are therefore existing in a state of response uncertainty, we may in fact be unable to establish experimentally verifiable consistency in response, unless that response has a biological rather than a cultural basis or unless we

have re-established non-verbal response norms.

2.ii. THE PLACE OF NON-VERBAL RESEARCH WITHIN THE HISTORY OF PSYCHOLOGY

The study of non-verbal behaviours is a field of research which has been pursued with mounting momentum in the nineteen sixties and which has developed predominantly as an American concern (although there are some notable exceptions, such as the work carried out by Argyle and Blurton Jones, which reveals a British attempt to merge their particular psychological tradition with both the research findings of their American colleagues and the European ethological influence). The reasons both for the relatively late interest in non-verbal responses and the fact it has been investigated with particular intensity within the American continent are, it is suggested, at least in part to be explained in terms of the development of psychology as an independent

discipline. We will deal first with those factors which mitigate against an earlier investigation of non-verbal behaviours and secondly with the reasons the research was pursued in America.

The nineteenth century psychologists were not insensitive to gesture and expression, indeed the 1872 publication of Darwin must have incited them to take an active interest in them, but they were constrained by several factors from attempting to involve themselves in an investigation of non-verbal responses. Firstly, if Darwin's theoretical position, as outlined in 'The Expression of the Emotions of Man and Animals' were accepted, the proposed methodological tool of comparative analysis had not been developed to a point where it could be used effectively. Comparative psychology was still at the stage of anecdotalism (in fact, to date, although we now have a substantial body of data on animal behaviour, the usefulness of comparative studies, except as a basis for hypothesis generation has still not been entirely resolved). Undoubtedly one further

complication in the implementation of Darwin's insights and the application of his postulates was the fact that he saw expression and the understanding of it, as being interwoven with the concept of instinct[1]. While instinct as a construct was in vogue up to that time in the nineteen twenties when the instincts as an explanatory mechanism for behaviour had been exploited ad absurdum, by the time the necessary refinement of an experimental approach which could be applied to the study of non-verbal behaviour was achieved, the conceptual involvement of the non-verbal repertoire with instincts placed it outside the main stream of interest of psychologists[2]. Secondly, non-verbal behaviour as a nineteenth century problem was intimately involved with the body-soul (mind) controversy and for that reason was probably left alone. It required some kind of conceptual resolution of the relationship between non-verbal behavioural response,

1. 'As most of the movements of expression must have been gradually acquired, afterwards becoming instinctive, there seems to be some degree of a priori probability that their recognition would likewise have become instinctive', Darwin, 1872.
2. It needed the impact of ethology to open up a new approach to the area.

motivation (intentionality) and emotionality, or, at least, the reformulation of the problematic in a way that made it accessible to empirical verification. Thus, while in many respects the current research into the non-verbal behavioural repertoire has not really sorted out the relationship between internal behavioural determinants and external ones, the nature of the intra-organismic variables is seen in terms of other conceptual models and the essential unity of the organism and the acceptance of the interrelationship between psychological processes and mental ones has been reached.

A further factor probably mitigating against interest in non-verbal response as affecting all humans was the attitude adopted by the French psychopathologists; one of the basic premises of their investigations was that the non-verbal behaviours which they observed were part of the disturbance of the individuals exhibiting them. Thus, while they had an acute interest in these gestural 'abnormalities', they were stimulated by a

search for non-verbal indices which were symptomatic of particular mental disorders and could therefore be used for diagnostic purposes[1]. From such a perspective the non-verbal concomitants of mental disorder were assumed to be essentially meaningless (idosyncratic or expressive of disturbance), without communicative intent and quite distinct from the non-verbal repertoire of so-called healthy individuals. Such assumptions were a very real hindrance for considering non-verbal behaviour in general, for they contained the hidden premise that if a so-called normal individual was seen to exhibit behaviours which had been categorised as symptomatic of a particular psychiatric condition then this was indicative either of impending disturbance or at least of a propensity to that disorder.

The powerful influence of the psychopathological attitude to non-verbal responses can be attested to from the number of investigators who have found themselves

1. There was an attempt to distinguish between hysterical and epileptic conditions on the basis of non-verbal indices.

obliged to combat it. Thus Grant (1972) for example stated:

> ".....from the viewpoint of non-verbal communication the mentally ill individual uses the same vocabulary as normal individuals and uses that vocabulary with the same meaning as the normal individual....."

and Birdwhistell (1970) asserted:

> "The emotionally disturbed.....do not assume postural positions which are not part of the repertoire of the remainder of the community. Rather they display their behaviour for durations, at intensities or in situations that are inappropriate for such behaviours".

An interest in non-verbal behaviours was shown by Freud, but his approach to them took a somewhat different path. The impact of his reasoning has nevertheless been incorporated into the main body of research into non-verbal behaviours, particularly through the work of Horowitz and in the analytical approach of Scheflen, and

must for this reason be understood. While it may be deduced from Freud's theory on the necessity of resolving common developmental dilemmas, that the psychologically healthy adult will presumably be predisposed to commonly shared expressive and behavioural modes, the psychoanalytical position did not place an interpretation on the mature non-verbal behavioural repertoire. The supposition was that an adequate development, that is, one which achieved a satisfactory resolution of the psychodynamic struggle in the evolving phases of personality development, would leave the adult personality in a state of relative equilibrium and consciousness. In such a state his non-verbal behaviours would presumably be expressive of that balance and consciousness (although occasionally temporary lapses might occur and non-verbal behaviours might then express unconscious wishes). Freud's main and explicit interest was however in disrupted or hindered (fixated) developments and he postulated that the psychic traumas which precipitated these could be translated into somatic symptoms (i.e. into non-verbal

behaviours), and stand as a symbolism of the internal state. Thus in his 1893 case history of Frau Emmy von N. he wrote "....however these motor symptoms may have originated, they all have one thing in common. They can be shown to have an original or longstanding connection with traumas and stand as symbols for them in the activities of the memory" (Avon edition, 1966, P.133). In the normal course of events the meaning of the non-verbal symbolisation was hidden from the subject. However through free association (a kind of spontaneous intro-spection) the past act or situation for which the behavioural symptom stood could be 'tricked' back into remembrance. Freud's position was quite distinct from that of the psychopathologists as he denied that non-verbal behaviours were meaningless. However his concept of symbolisation means the development of an approach to non-verbal behaviours which asked what they stood for. This led to the development of methods for ascertaining the state of the organism and for the solving of idiosyncratic non-verbal behavioural "puzzles", and away from concurrent

environmental determinants of behaviour. For if non-verbal behaviours, or at least a portion of the non-verbal behavioural repertoire, were responses to temporally distant, internalised situations, they were presumably disassociated from other variables operating.

Although the psychoanalytical approach was not adopted in toto the study of non-verbal behaviours has nevertheless been involved with the question of whether the responses are conscious or performed 'out of awareness' (this will be discussed in some detail later) and with the related question of whether non-verbal responses are more honest/accurate than verbal ones. Moreover, Horowitz's understanding of space usage (in particular the 1968 study) is based on the premise of a symbolic use of spatial distancing. In the main however the psychoanalytic approach to non-verbal behaviour led away from an experimental psychological approach as did the other developments in psychology within Europe.

This leads on to an explanation of why non-verbal behavioural research evolved predominantly as an American

concern. When the original impetus of the psychophysical tradition of Helmholtz, Fechner and Wundt reached a point close to sterility, regenerative impulses within Europe and in America followed different paths (although there was, as suggested, some measure of interaction between them). The European solution to the apparent impasse evolved out of the less stringently scientific (i.e. experimentally founded) field of psychopathology and the more philosophically oriented concern with personality. This merger, which found expression in the psychological theories of Freud and Jung and which led to the re-establishment of a link between philosophy and psychology through phenomenology, existentialism and Daseinsanalyse, was preoccupied with the individual and the attainment of a kind of psychological perfection (almost the equivalent of salvation), or individuation ('Selbstverwirklichung'). Although the Tiefenpsychologien (literally, depth psychologies)attempted to provide an empirical verification for their theories through the preparation of psychodiagnostic tests, their concern with personality

as distinct from behaviour meant that non-verbal responses, if not ignored, were nevertheless seen as expressive of the underlying personality and as individualised responses.

In contrast, while American psychology had begun with a particular interest in individual difference[1], that interest, instead of leading to an investigation of personality, had, under the direction of such men as William James and Stanley Hall, turned towards the understanding of normal behaviour. Moreover it was a study of normality which granted recognition to variations in normality as determined by the influences imposed by varying cultural traditions. American psychological interest in non-verbal behaviours started then from a different basic premise from the European one (which was based on a normal/abnormal paradigm); namely, that variations in non-verbal behaviours were produced by varying environments and as the result of differing

1. Wundt had indeed in conversation with Stanley Hall referred to it as "ein ganz amerikanisches problem".

experiences of non-verbal interactional modes (i.e. a typical-atypical paradigm). It approached it moreover, using the tools of experimental psychology.

Nevertheless, the interest in and development of research into non-verbal responses cannot be seen entirely in terms of influences operating exclusively within the discipline of psychology. It has been stated that many of the behaviours which were to be investigated in non-verbal behavioural research were already variables in other psychological research, albeit ignored ones. The social psychological interest in the non-verbal repertoire was given impetus from insights in other disciplines and it is to this next that we must turn.

2.iii. INFLUENCES OPERATING ON NON-VERBAL RESEARCH FROM OTHER DISCIPLINES

Although non-verbal behavioural research has been incorporated as a part of social psychology, there is a growing awareness that it is in many respects an inter-

disciplinary study. Not only has it been stimulated by and, to some extent, has evolved out of research methods and hypotheses developed in other disciplines (notably ethology and anthropology), but it is still in the process of integrating insights from such currently emerging ones as ecology.

While it is acknowledged that the total body of thinking about non-verbal behaviours is still a growing one, it is felt that the usual explanation for the inadequacies and discrepancies in the conceptualisations, i.e. that the research area is still in its infancy, may be misleading. For while some researchers have expressed the conviction that the time is not yet ripe for a unified conceptual underpinning to the research, it must be recognised that there already exists a considerable body of theorising (albeit lacking in empirical support), which has provided the basis for much of the research carried out to date. Moreover it seems probable that some of the difficulty of developing a unified theory came from conflicts in this already existing body of concepts. This

may in part, it is suggested, be attributable to basic divergencies in both the theoretical positions and methodological traditions of the disciplines which have most decisively influenced the generation of hypothetical constructs within this research area. It is therefore essential both to delineate the nature of the influence exercised by these disciplines and to indicate where unresolved or unintegrated concepts remain.

It is felt, and this will be elucidated in this section, that the most fundamental conflict lies between the ethological methodological approach to human behaviour and the anthropological one. It will further be discussed whether researchers in the field of non-verbal behaviour have however to some extent increased the difficulty by neither following the paramount methodological principle of ethology (namely, replication) nor asking the right questions about the interrelationship of non-verbal behaviours when constructing research designs based on a structural paradigm. The correct kind

of questions would seem to be,if there is a structure, what is the nature of this structure and how can one identify it experimentally; the tendency however has been to assume relationships without adequate empirical verification.

The impact of ethology on the development of research into human non-verbal behaviours has been acknowledged by many researchers in the field (e.g. Scheflen, 1972; Patterson, 1968; Edney, 1972). While the influence is certainly apparent, it might be suggested that the willingness to stress the ethological contribution rests in part on a desire (although perhaps researchers have been unaware of it) to lend weight and, above all, scientific respectability to research into non-verbal behaviours. As has already been suggested, it seems probable that psychologists felt somewhat constrained by the rather questionable pre-psychological interest in gestures and facial expressions and also by its entanglement with the body-mind controversy. The ethological approach to behaviour was by the nineteen sixties (that is at the

time when interest in non-verbal behaviours was mounting) a scientifically accepted one, not on the basis of its theorising but because its rigorous methodology has succeeded in identifying illuminatingly precise and elegant patterns of response. The fact that these behavioural sequences could be attributed to the triggering of innate releasing mechanism ('angeborene Auslosemechanismus', Lorenz) which in terms of a theoretical explanation were not substantially different from the concept of instinct[1] was not a hindrance, since there appeared to be empirical verification for the hypothesis. It followed however, that if psychologists adopted the methodological approach of the ethologists and could demonstrate response sequences of a similar nature for human behaviour, they might once more be faced with incorporating some concept of instinct or innate predeterminant into their theorising.

1. Tinbergen's theorising, in particular, shows a close resemblance to that of McDougall.

Undoubtedly, part of the appeal of the ethological approach to social psychologists was that it was concerned with the observation and recording of behavioural sequences within communities of animals and as far as possible within the natural environment. The growing disillusionment which was felt by some social psychologists towards laboratory studies led to attempts to observe what was happening in a variety of natural settings. This in turn needed a viable methodological approach, which it was considered could be provided by a refining of the ethological one (e.g. Efran and Cheyne, 1973: 'the methods employed in these studies were intended to reflect...the naturalistic ethological tradition....'). In fact, what really seems to have been taken over, is less the method, except in such careful and meticulous work as that carried out by Blurton Jones and his colleagues (1972, who should probably be considered ethologists rather than social psychologists anyway), than the optimistic hope that it is possible to obtain valid data in the natural environment.

Such a hope, if it follows an ethological mode of thinking, rests not on isolating all the external variables which determine responses, but rather on being able to establish behavioural sequences and the significant variables which trigger these responses. The theoretical basis then, is that, while an individual may be subjected to a diversity of stimuli in any given situation, only certain of these have a valency for him, so that variations in the external variables will not in themselves be significant if the preponderant stimulus is present. Moreover, methodologically, the stimulus or signal configuration which initiates a response sequence is found by first identifying the latter[1]. In fact while Efran and Cheyne (1973) pay lip-service to the ethological tradition, their particular methodological approach does not follow the ethological paradigm. They start rather with an ethological concept, namely territoriality, and develop an experimental situation in the natural environment

1. This led to the development of sequence analysis and the investigation of chained responses.

to substantiate the validity of the concept. While this does not invalidate the research carried out, the designation of the observed behaviour as territorial is, to say the least, somewhat premature (a common criticism of much of the research into spatial behaviour which has used the territoriality concept). This will be discussed further in the appropriate section.

The fact that some researchers in the area of human non-verbal behaviours have, however, failed to do what they say they are doing does not mean that the ethological method does not still have a contribution to make to field studies into non-verbal behaviour if applied properly (i.e. inductively and following the rule of replication).

Research into non-verbal behaviours has been attracted by the possible implications of ethological concepts for the analysis of human behaviour. This rests on the acceptance of a biological continuum, so that while social psychologists do not expect to find identical patterns of behaviour they nevertheless, on the basis of analogy

anticipate that comparable patterns of response may be found in the human behavioural repertoire. However, the point that while the ethological tradition is indeed rich in hypotheses, it has proceeded to develop a body of theory in a piecemeal fashion seems largely to have been missed. This has arisen from the primary emphasis on the collection and collation of observational data. The concepts evolved have tended to be descriptive (even at times anthropomorphic) and little attention has been paid to developing a consistent and precise model of how these concepts interrelate. The integration and use of essentially descriptive concepts however has led to the formulation of a body of theories about human non-verbal behaviours which are at times speculative and certainly disjointed.

Although ethology is more widely acknowledged both as a methodological model and as an inspiration for hypothesis generation for non-verbal research, anthropology has probably in fact exercised a more pervasive and potent influence on the development of non-verbal behavioural

theory (largely as a result of the work of E.T. Hall). Indeed a component of its subtle and deep-seated influence lies precisely in the apparent unawareness that it has provided the theoretical premises upon which much of the research has been based. Clearly, such a proposition cannot be made without clarification and substantiation.

The influence of anthropology on non-verbal behavioural research was most significantly exercised by those of a structural anthropological persuasion (notably of course Levi Strauss). The major insight of the structural anthropologists was a recognition of the possible relationship between language and other culturally determined behaviours, with the subsequent assumption that if this were so, then the structuring of language as a sign system might be extended and applied to those other modes of cultural expression. While Levi Strauss acknowledged the distinction between biologically determined and culturally learned responses, the actual division was complicated by the concept of 'unlimited semiosis' which meant that any behavioural response could be utilised as

a sign (i.e. given a culturally significant designation). The identification of these non-verbal behavioural components which did qualify as signs could however be pursued in two distinctive ways - either by establishing the underlying conceptual structure or by elucidating the interrelationship of the sign systems[1].

While Levi Strauss and those who followed his thought saw the primary methodological approach to cultural phenomena as establishing the 'universal' laws of which all behaviours were an expression (this will be discussed further in the following section as some social psychologists have also adopted this approach) the major influence of structuralism was through the theory of the interaction between the sign systems (or sub-systems - these terms have tended to be used interchangeably). The organisation of the total sign or communication system

1. This followed the premise that separate components of the system can only be understood in the light of the system as a whole and that the sub-systems of the total system conform to certain interactional principles.

was considered to be determined according to three basic principles, namely (as stated by Piaget) totality, transformation and self-regulation. The first two principles regulated the relationship between the various sub-systems, while the latter, better perhaps termed internal coherence, delineated the nature of the individual dynamic of each sub-system. It was considered that the various sub-systems which made up the total system were a unity; conceptually, because they all expressed through different modalities the same underlying structure, and dynamically, because each sub-system was equivalent to (or a transformation of) each other[1]. The concept of equivalency is important as it raised the status of non-verbal behaviours on a par with verbal expression, thereby making implicit the connection between non-verbal responses and expressive content[2].

1. "It is the very essence of structures...that they are capable of expression in multiple forms which are the transformations of one another", Leach, in ed. Robey, 1973.
2. If they were a transformation of an idea, they must also be related to that idea - this raises certain problems for the study of the non-verbal behavioural repertoire.

Further the concept of internal coherence, which is the regulating principle of each separate communication modality, implied a conceptual organisation. That this is what was initially intended, may be drawn from the comment of Leach, in Ed. Robey 1973 '...the structure of ideas which relate to....(space).....is coherent in itself'.

It will be seen from the divisions of non-verbal behaviours into systems, which we shall consider in the following section, that while the concepts of structuralism were utilised, it was frequently with a disregard to any ideational framework. Indeed what was really sought for was a theory of exclusively dynamic interrelationships[1]. Perhaps the other major problem arising out of this approach to the non-verbal behavioural repertoire was that the metahypothesis contained within itself an implied dichotomy which could be expressed as nature versus culture[2].

1. General systems theory went some way at least to providing such a theory.
2. Natural behaviour would then presumably lie outside cultural 'articulation'.

This raised the question whether there were other principles regulating behaviour which were not part of the total cultural expression, and indeed, whether it was possible to exhibit any behaviour which could not be designated a cultural manifestation. The answer to such a question rests both on the definition of culture and further on the criteria used to identify a 'sign' and to distinguish 'communication' from 'non-communication'[1].

In contrast to the ethological approach which was inductive, the anthropological one was essentially deductive; they nevertheless shared to some extent the anticipation of an internal structure. While however the ethologists and certainly Levi Strauss postulated a pan-cultural structure, E.T. Hall, who was most influential in incorporating structural anthropological ideas into the psychological study of non-verbal behaviours, did not. He stated (with an awareness that this was by no

1. This assumes the possibility of behavioural 'non-communication' - autistic responses might conceivably fall into this category.

means accepted by all anthropologists) that the communicational systems were culture specific. In other words, while he held to the concepts of internal coherence within individual systems and transformations between systems, the implication of his stress on cultural specificity meant that no direct comparison between cultures could be made at any level. Very little recognition appears to have been taken of this; in particular the consequences, as far as cross-cultural research is concerned, have largely been ignored, for if Hall's supposition is correct then attempts to establish the nature of the various communicational channels except in terms of their dimensions and interrelationships for individual cultures would be meaningless (i.e. there is no basic, commonly shared substructure).

The sociological approach to non-verbal behaviours, which has perhaps found its most eloquent expression in the writings of Goffman, has tried, more than any other, to incorporate the growing awareness of a division between an individual's sense of identity and the social roles

he is required to perform. It has already been suggested that this new level of self-consciousness, that is the feeling of a division between the person and the society of which he is part, may be attributable to the weakening of the social structure. It can possibly also be partially explained in terms of the multiple roles which individuals are required to fulfil in modern urban cultures, frequently before distinct and unrelated communities. Out of the ensuing lack of complete emotional commitment and loss of coherence of one's acts, Goffman developed role theory. Role theory postulates that an individual performs a particular set of verbal and non-verbal behaviours according to the requirements of the role he is fulfilling. However,a culturally satisfactory enactment of a particular role is dependent both on an understanding of the role requirements and also on the extent to which the role is accepted. From this came several significant reflections for research into non-verbal behaviours. First it contains the necessity of

knowing the role allotment, for, as Goffman has pointed out, apparently bizarre non-verbal behaviours may be comprehensible in terms of that role. Secondly, it indicates that there may be degrees of fulfilling that role, with the possibility of the sense of division (or alienation) between performance and role, finding expression particularly in non-verbal and paralinguistic behaviours as these are less subject to social censoring.

The sociological insights into non-verbal behaviours are not particularly comfortable ones for those pursuing an experimental tradition. For not only do we lack experimental means for testing the validity of the constructs but the postulation of an intervening rationalising and monitoring moment denies the direct relationship between stimulus configuration and response, since it implies that the response may be chosen and variable.

The impact of ecology upon non-verbal research has undoubtedly been to sensitize workers to the total environmental contingencies operative in any given situation. This awareness has undoubtedly grown out of the concept of ecosystem and has provided two perspectives for approaching the inter-

relationship between the individual and his environment. On the one hand one can view the environment as a determinant of social behaviour in the sense of an independent variable, but on the other, one must recognise the environment as being'acted upon' in the sense of a behavioural or dependent event (Altman et. al., 1971). Methodologically this has led to the proposal of a multi-level analysis of the behaviour-environment interrelationship[1], that is of verbal, non-verbal and environmental prop behaviours. Such an approach stands on the premise of the fundamental unity of all levels and modes of response at any particular point in time (and as such stands in opposition to some of the sociological constructs previously outlined).

It is not easy to give a unified picture of how these various influences have directed the course of non-verbal research, as their influence is felt to varying degrees

1. 'An ecological orientation...calls, ideally, for the analysis of as many of these levels of functioning as possible within a single program of study', Altman et. al, 1971.

in the still divided approaches to the field. In some ways indeed, particularly methodologically, the divergent research traditions of the disciplines involved are virtually impossible to weld together as they start from diametrically opposed positions.

What has consequently tended to happen is that each new study, aware of the conceptual and methodological weaknesses of previous studies, has tended to try to devise an approach which takes into consideration as many of the different insights as possible. There remains, however, still unresolved, the relationship between innate and cultural determinants of non-verbal behaviour.

2.iv. THE STRUCTURAL APPROACH TO NON-VERBAL BEHAVIOUR AND THE PROBLEMS ASSOCIATED WITH THE NON-VERBAL COMMUNICATION CONCEPT.

Those most influenced by the ethological approach have in the main tried rigorously to avoid developing any particular conceptual model of the interrelationship between various non-verbal responses, preferring instead

to concentrate on observation and description of the entire repertoire. Blurton Jones for example states (in ed. Burton Jones, 1972); 'Ethological methods are held to be partly characterized by....use of large numbers of anatomically described items of behaviour as the raw data, (and) a distrust of large preselected and untested categories of behaviour'. Those, however, who have pursued their research incorporating at least some of the tenets of the structural anthropological approach, which has previously been outlined, have inevitably involved themselves in postulating some kind of apriori order or organisation of response. This is not to suggest that the structuralists were any less demanding in their approach or less extensive in their treatment of non-verbal responses but that they worked within a different conceptual framework which was founded on the juxtaposition of the non-verbal and the verbal. While this semantic delineation was only one of the conceptual constraints which influenced their research, it was, together with the concept of communication, of fundamental importance in

their theorizing. Indeed, these concepts came to have a pivotal position in that body of non-verbal behavioural research which did not follow the original structural position based on a thesis of an underlying body of ideas. The use of such organisational categories as explanatory concepts could not however be done without creating difficulties. We shall in this section distinguish between the original structural approach to non-verbal behaviours and then discuss the variations of this and the resulting problems for research.

The contribution of such thinkers as Levi Strauss had been to assert that the principles or rules of structuring and concept formation which occurred with language development were directly related to other behavioural responses and that both were subject to an underlying set of concepts or rationale. While Levi Strauss considered that this substructural logic was founded in fundamental dichotomies (life-death, nature-culture, raw-cooked) which were 'universal laws which regulate the unconscious activities of the mind' (quoted by Mepham,

in Robey (ed), 1973), its expression in social behaviours was essentially comprehensible rather than communicational; that is, one could analyse the behavioural variations in terms of these fundamental laws, the individual performing the behaviours, however, need not necessarily be conscious of or aware of them. Thus Levi Strauss started from a premise, not dissimilar in fact from that taken by C.G. Jung[1] and reminiscent of that stream of philosophy which accepted a priori ideas or absolutes. From such a position all human activities could be considered to be subservient to the underlying structure and expressive of it, so that one could trace the transformation of the fundamental dialectic through both verbal and non-verbal variations in whatever a person was doing. Consequently an understanding of the behavioural repertoire of other individuals rested not on the direct communicational content of the behaviour,

1. The 'universal laws' seem in fact comparable with the archetypes.

(the verbal or non-verbal behaviour might or might not be interactional) but on the recognition of the substructural concepts or of the 'systeme symbolique'.

Clearly this controlling rubrique of 'universal mind', was not so different from the concept of an innate determinant of behaviour, such as an instinct. Indeed, C.G. Jung (1968, in 'Man & his Symbols') acknowledged a relationship between instinct (or the 'instinctive strata of the human psyche')and archetypal images or symbols when he stated: 'What we properly call instincts are physiological urges, and are perceived by the senses. But at the same time, they also manifest themselves in fantasies and often reveal their presence only by symbolic images. These manifestations are what I call the archetypes' (p.58). While Jung's approach to the relationship bears many of the hallmarks of a pre-psychological mode of thinking, the assertion of an internal, genetically based behavioural determinant finding expression within the conceptual framework is

not so absurd. Indeed it seems likely that the 'demand characteristics' of innate impulses towards particular response patterns, should they exist, might, as a result of the human capacity for reflection and self-observation, be incorporated into rationalisations about why a person feels constrained to do certain things (i.e. the urge to fulfil a prescribed predetermined biobasic impulse may be ascribed with a purpose, for the concept of purpose is a consequence of reflection).

If then this is a feasible approach why should a dilemma exist? This appears to have arisen from the juxtaposition of culture versus nature (or expressed in another form of mind versus emotions, or learned versus innate). Those who have studied non-verbal behaviour have anticipated two distinctive modes of influence. Weston La Barre (1964, in ed. Sebeok, Hayes and Bateson), for example, called for an investigation and delineation of 'the precise boundary line between instinctual movements, expressions and acts versus the numerous culture-based kinesic codes that must be learned', and

more recently Argyle (1975) stated that the 'non-verbal communication of emotions is largely innate and is partly due to the direct effect of physiological states' (in contrast with other non-verbal responses which were learned). What emerges from this mode of division is the anticipation that innate determinants of non-verbal response are somehow automatic (possibly spontaneous would be a more appropriate expression) and exclude conscious control. However, the methodological approach to the substantiation of pancultural non-verbal responses has tended, unavoidably, to rely on identification of emotional states through report[1]. Indeed, as Argyle (1975) admits these 'universal features' may be either innate to man, or necessary aspects of social life. It is apparent from this that we lack an understanding of innate components if they exist. It seems, moreover, possible that a resolution of our ignorance may rest on being able to see cultural and innate components as

1. This involves the utilization of a conceptual framework which is considered to be culturally taught.

interrelated rather than as juxtaposed.

This leads on to the possibility that if there is a structure which relates non-verbal behaviours to each other then that structure may be explained either in terms of underlying concepts (semantically) or in terms of abstracts which relate essentially to the arousal level of the organism. A semantic set of response determinants would involve an assessment of the situation in terms of mental concepts on a continuum of, for example, friendly-hostile, familiar-strange, male-female etc.. In other words it would involve an identification of the situation in terms of ideas about what was initially perceived. The alternative mode of reaction, which would presumably run parallel to such an identification, would involve an assessment of the situation in terms of the need state of the individual, e.g. feel lonely, want company, feel oversatiated with stimuli, want to be alone etc. It is suggested here that these may not in fact be distinct from each other but may

rather interact (so that an assessment of a situation as hostile and strange might, for example, produce a physiological adjustment).

Those psychologists who have tended to postulate some form of substructural determinant of non-verbal behaviours have tended to select concepts which fall into the latter category of need states. Argyle and Dean (1965) postulated that intimacy, as the degree of desired contact, might regulate non-verbal responses, although their thesis of equilibrium (really homeostasis) did not allow for variations in need level but anticipated maintenance at a level which did not cause over-arousal[1]. Altman (1975) suggested that non-verbal behaviours (particularly spatial ones) could be understood in terms of the need to establish and maintain privacy (i.e. the avoidance of the over-arousal of the organism). Those working in terms of such basic concepts (or needs),

1. Some of the variations in research findings working with Argyle's paradigm may possibly be explained in terms of a willingness under certain conditions to permit higher levels of arousal, e.g. Patterson, 1968.

however, have not established whether variations in non-verbal response are nevertheless still subject to the core concept or whether there might be several such organisational principles or concepts which determine response. If more than one need state is considered to activate non-verbal responses, then it is necessary to establish empirically how these are interrelated[1] and whether there is a hierarchy of needs (i.e. which underlying needs have response precedence).

If one started from the supposition that there was an underlying idea or concept, then the actual division of non-verbal behaviours would be determined according to it (or them), rather than according to any division based on types or modes of response. The majority of the earliest researchers into non-verbal behaviour, however, did not try and establish underlying determinants of non-verbal response but chose rather to try and establish

1. It has, for example to be determined whether certain responses can only occur when a specific underlying concept is activated or whether the same response may be an integral part of several such core concepts.

the structure from the dynamic principles which were said to hold the system of responses together (not an unreasonable approach, providing the dynamic relationships proposed could be shown to be valid). Such an approach, if followed in a pure form, would involve the massive task of establishing the structural interrelationships, equivalencies and transformations across subsystems and was for this reason criticised by Wiener et. al., 1972, '...if there is no a priori specification of the set of movements to be analysed structurally, then Birdwhistell and others are left with the impossible task of analyzing every movement...'. There were, however, two alternative paths taken to cope with this dilemma, on the one hand some kind of order was superimposed on the non-verbal behavioural repertoire, on the other the concept of communication was used as the criterion for determining which responses were part of the system. Both of these latter approaches, while solving some difficulties, also created a new set of problems.

The imposition of a structural framework onto the data could be achieved by rationalizing about man's possible response dimensions and deducing a structure in terms of these modes. This would be based essentially on sensory modalities, for modes of adjustment to a physical dimension could be related to spatial adjustment (movement), auditory adjustment (sound - this might or might not be a linguistic response), olfactory/biochemical adjustment (out of the control of the individual but nevertheless a stimulus in terms of the environment), tactile adjustment and visual adjustment. This could be compared with Birdwhistell's (1970) division into audio-acoustic, kinesthetic-visual, odour-producing-olfactory and tactile. Birdwhistell, however, assumed an interrelationship between the sensory modalities and developed a model of the interplay of non-verbal behaviours around such functional concepts as proxemics and kinesics. Thus, proxemics, which has been defined by Duncan (1969) as 'the use of social

and personal space', involved an implementation of a combination of possible response modalities. These were kinesthetic factors, touch code, socio-fugal-sociopetal orientation, postural sex identifiers, retinal combination, thermal code, olfaction code and voice loudness. The way in which these behaviours functioned as a 'body motion system' was considered to be culturally defined and affected by the interaction between the various systems or channels. Another approach to structuring non-verbal behaviour would be to relate it to concepts (i.e. cognitive constructs) associated with the stated response modalities e.g. space, tactility, vision. While this method of developing a framework has not really been tried, it does possibly offer quite a useful tool in that it would provide a bridge between developmental aspects of non-verbal behaviours and later established/ presenting ones as well as between the cognitive and the behavioural.

The concept of communication has in much of the

theorising substituted for an underlying rationale. The result of this has been that where the original structural position saw the total cultural framework as expressive of the underlying ideas, which might or might not involve the wish to communicate, the elevation of communicational intent to the place of the logical or rational determinant of verbal and non-verbal behavioural responses, created the difficulty of resolving the level of awareness of response. It raised the questions for example whether the meaning was explicitly or iconically revealed in the behaviour and whether or not the performer of the behaviour was aware of it. Furthermore the idea of non-verbal communication carried with it the implicit juxtaposition to the verbal (evolving of course out of the influence of structural linguistics and the conviction that the same basic organising principles would be applicable to the non-verbal behavioural repertoire), with the consequence that the non-verbal behaviours which

first attracted the attention of researchers were those that were evidently communicative (i.e. were either interaction-servicing or interaction-maintaining behaviours). This led to difficulties, however, in definition, as it raised the question of whether non-verbal communication and the non-verbal behavioural repertoire could be equated. If they could not then several alternatives could be postulated, namely that non-verbal communication could be considered a sub-group of the total possible spectrum of non-verbal responses, or secondly that non-verbal communication could constitute one self-contained, culturally determined system which existed parallel to other systems involving non-verbal responses (with the possibility that within each system the same behaviours had a different meaning or valency). We shall expand on this further, as the difficulties are fundamental.

While an understanding of the non-verbal behavioural repertoire has become almost inextricably involved

with the conceptual model which regards it as part of a total communication system, the validity of such an approach rests on the assumption that the conceptual model is a correct one. One basic problem, however, was that while non-verbal communication could be defined as those components of the total non-verbal behavioural repertoire which could be considered as parallel to the verbal communication system, this did not necessarily include all non-verbal responses. Thus Birdwhistell (1970) stated quite categorically '...under no circumstances would all body motion, all movement of bodies in space be subsumed under something called kinesics, any more than I think that all sound made in all circumstances is to be subsumed by linguistics or paralinguistics'. This appeared to imply that some non-verbal (and verbal) behaviours were arbitrary or chance movements[1] which occurred simply because the organism was alive

1. Perhaps rather like the Leerlauf or displacement activities described by the ethologists.

and had an energy-overflow or tension-release need. They did not, however, have any meaning in terms of their relationship either to external stimuli or to non-verbal responses, which were integrated in a coherent system. The difficulty of such an approach has to be related to the way in which sounds or gestures acquire meaning.

The communicational property of a language rests not on any intrinsic meaning of the actual sounds (except possibly in cases of onomatopoeically formed words where the sound may be close to imitation), but on a common agreement to use a particular sign or verbal signal to designate a particular object. It follows from this then that a language is a selection of the possible total combinations of syllables. However, the problem arises that while the sounds which are not contained within a framework of a language are meaningless, extraneous non-verbal responses may still be congruent with those selected for communicational intent i.e. they still appear

meaningful and expressive of the internal coherence of the organism.

Abercrombie (1968) also showed an awareness that not all non-verbal behaviours could be considered to be part and parcel of that system of communication which included language. He postulated that there existed a sub-category of non-verbal responses, namely paralinguistic phenomena, which occurred 'alongside spoken language, interact (ed) with it and produce(d) a total system of communication'. Nevertheless there remained in addition to this a range of non-verbal behaviours, which could not be interpreted in terms of an interactional communication model; for while 'paralinguistic behaviour (was) non-verbal communication...not all non-verbal communication (was) paralinguistic'. Undoubtedly Abercrombie retained the communication concept because he believed that these non-verbal behaviours which did not function together with language had meaning. The problem of course arose from his description of

the linguistic and extralinguistic responses as a 'total system'.[1] Possibly what he intended was to convey the sense of the interrelatedness of language and paralinguistic phenomena but while he perceived the way in which they dovetailed into one another, he offered no suggestion as to the way in which the 'left-over' non-verbal communication components operated.

An alternative, superficially less problematic, way of integrating responses was to see the communication system as consisting of various response modes or channels. Thus Birdwhistell, having imposed a logical structure, nevertheless retained the communication model and saw communication as '....a system which makes use of the channels of all sensory modalities'. Hall (1963) assumed a comparable position for he spoke of the factor complexes (or dimensions) as 'closed behavioural

1. This raised the question of how it could be a total system if there were also other meaningful non-verbal communication responses.

systems' (implying that the systems of complexes did not interact). The simplicity is, however, only an apparent one as such questions then arise as whether all channels are equal or whether they stand in some kind of hierarchy, what determines which channel will be utilized, etc.

Indeed it seems that a final resolution of the relationship between verbal and non-verbal communication has not yet been reached. Argyle (1975) suggested that the reason we may have failed to attain a functional understanding of the inter-relationship may be that we have followed the wrong paradigm. Birdwhistell and those influenced by structuralism had assumed that dynamically the various channels followed the same principles (these were those which we have already noted) and that whichever mode of expression was used it would constitute a signal to the receiver. Argyle, however, questioned whether non-verbal communication functioned like a language and stated that if it did

not 'we need to find out exactly how it does function as a system of communication'. He pinpointed what appeared to him to be the crux of the dilemma when he acknowledged that 'many of the signals are not really signals at all, but basic social behaviours', (although it revealed his sense of a juxtaposition between feeling as something spontaneous, unlearned - he considered aggressive and affiliative behaviours constituted these basic social behaviours - and thought, which involved the implementation of social schemata).

It is necessary at this point to consider what was meant by communication by those who first developed the model and how this relates to behaviour. If the concept of communication implied the passing of information or a 'message' from one individual to another, the unit of such interactions was the signal or sign (Exline, Gray and Schuette, 1965). However, for such a message to occur, whether orally or through other non-verbal behaviours, a common

knowledge of the mode of communication must exist. This meant that unless the interacting individuals spoke the same language or shared the same culturally selected set of significant non-verbal 'signals' an effective communication could not occur (unless based on innate or purely affective behavioural components as postulated by Argyle and by Bateson before him) or only at least to a limited degree. This latter consideration rests on Aiello and Jones' (1971), suggestion that some comprehension based on 'some homogenous degree of non-verbal expression which prevails across cultures' might enable this to happen.

If there was fairly general agreement with Birdwhistell's statement that 'a communication system is not something we invent but rather something we internalized in the process of becoming human', the real difficulty arose as to which non-verbal behaviours constituted a part of that communication system (Humphries, 1970, ed. Blurton Jones: 'Having

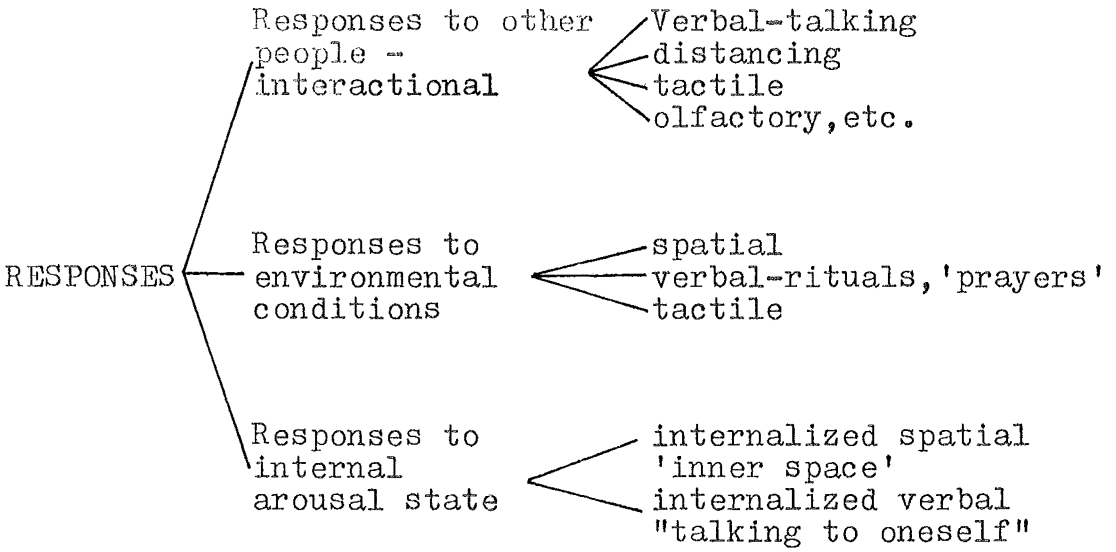
broken down non-verbal behaviour into a series of observable and precisely defined units, we may enquire how many of the units serve as signals'; Mehrabian, 1970, criticized the 'arbitrariness with which non-verbal behaviours are isolated as being a part of communication'). Some writers tried to determine it in terms of the response of the person being interacted with, so that the alteration of his subsequent behaviour was taken as indicating which behaviours were signals for him (Brannigan and Humphries, 1970 ed. Blurton Jones). Scheflen (1972) stated that communication was based on 'reciprocal interchanges', so that on that basis analysis of the on-going non-verbal behavioural adjustments made by interacting individuals would indicate which had signal valency[1]. Not all researchers, however, were satisfied with either of these approaches. Wiener et. at. (1972), following

1. This was the approach Scheflen took when he analysed quasi-courtship behaviours.

the kind of criticisms which had already been made by Ekman and Friesen (1968), asked whether just because the recipient in an interaction could interpret or understand the non-verbal behaviours this could be equated with communication. Ekman and Friesen (1969) had already suggested that some non-verbal behaviours might be informative rather than communicative. Wiener et. al. made much the same point by trying to distinguish between a sign (a comprehensible behaviour) and a communication (a transactional behaviour). Argyle (1965) was, however, either less troubled or less convinced that these distinctions were meaningful. He stated: 'the function of a signal for the sender may be rather different from its meaning to a recipient - though the two evolve together as part of a total system of useful communication'. Part of the problem rested on the possibility that non-verbal adjustments might occur without participants in an interaction being consciously aware of them (we shall discuss this in

the next section), and it was difficult to equate this with the idea of communication. Another dimension of the problem was essentially a semantic one. While Wiener et. al. (1972) tackled the problem by asking what was meant by communication, an alternative possibility would be to begin by defining behaviour. If one started from the premise that everything a person does falls into the category of behaviour (i.e. all responses are behaviour), then presumably communication would be a subcategory of behaviour. The question would then arise as to which behaviours were communicative (and whether by intention, or by inference of those interpreting the particular responses). Such reasoning may however rest on a further semantic fallacy in that one might be dealing with a model of linguistic interrelationships rather than actual ones. An alternative approach may be to abandon attempts at relating the communication and behaviour concepts and to work from a different conceptual model (see Fig.1).

Fig. 1



The communication model had, at the time it was first utilised as a structuring mechanism, appeared an inspiration but it had grown out of the conviction of the interactional quality of both language and extralinguistic responses. The kind of revelation which had dawned in the mid-nineteen sixties was typified by Rosenfeld's (1966) comment, '....our common reliance upon the verbal content of transcripts of social interaction may blind us to kinesic and perhaps paralinguistic dimensions of behaviour that complement, modify or even supercede the functions of verbal content'. However, while the communication model undoubtedly generated a great deal

of research (and it is indeed doubtful that we shall now be able to banish the concept of 'non-verbal communication'), there was a particularly thorny problem which it brought with it which is rarely examined in detail. It is to that that we shall now turn.

The postulate that the same 'message' may be expressed in a number of different ways was a component of the structural theory of non-verbal behaviours. The structural approach, however, was not a completely unified one and consequently the concept of substitutability varied somewhat from writer to writer. Hall (1963) used the term 'interchangeability' to mean that one non-verbal 'isolate' (that is the basic identifiable unit of non-verbal behaviour) could be used in the place of another without altering the meaning of the total signal configuration (or set). Presumably Hall's theorising was derived from his belief in the essential arbitrariness of those particular non-verbal behaviours selected as part of a socially

meaningful communication. That being so, the alteration of a particular portion of a total message would only require a general consensus of approval from the particular community to acquire a status of communicational equivalency. Thus, the concept of substitutability was based on a communal agreement on a rational level. The actual choice of which non-verbal unit to use to convey a particular socially predetermined meaning, where two or more equivalent behavioural components were available, would presumably be an interaction between personal preference and the degree to which one or other 'isolate' were becoming communally obsolete (as a consequence of the cumulative choice of all the individuals within that community). The implication of this was that equivalency or inter-changeability might be altered by cultural bias and that the non-verbal communicative repertoire was essentially a dynamic one. It followed then that no specific place of non-verbal behaviour could be

said to mean anything except in terms of the total communication network or pattern for the specific community at that particular point in time.

The problems for research from such a position are numerous; for, if the same set of variables may produce divergent responses, which are nevertheless essentially equivalent, it becomes virtually impossible to determine whether the variation is the result of unidentified variables operating or interchangeable responses to the same variables. The problem is particularly acute as Hall postulated that these response patterns may function outside human awareness once they are established, so that it would not be possible from verbal inquiry to establish what meaning the individual attributes to his response. It also means that variation of response across studies may simply indicate that the individual is using an alternative but equivalent response.

From Hall's point of view however, the problems produced by interchangeability of response could be resolved by studying total response sequences

instead of isolated portions of responses. While this would undoubtedly be a demanding exercise, the establishment of the total structure or pattern of response would then make apparently conflicting research findings meaningful. Naturally this was based on the assumption that there was a stable structure or pattern, which remained constant.

While Hall's approach allowed for some kind of conceptualization of how non-verbal substitutes evolved, the term 'substitutability' has also been used for equivalency across systems. If one conceives of a non-verbal communication system which is interrelated to or somehow comparable with verbal communication, then the question of whether the same 'message' is carried by both systems concomitantly or whether the 'message' may be carried by either system without the use of the other arises. If the assumption of "the necessary interdependence of the kinesic and linguistic" (Birdwhistell, 1970) is made, then one may assume a multidimensional expression of meaning, where all possible communicational modalities

(or systems or channels) combine together to convey the same message. While this might over-determine the communicational content[1], the thesis would nevertheless mean that all signals occurring together would carry the same message. Thus, while amplification of content might occur preponderantly verbally or non-verbally the other behaviours observed would complement the dominant response mode. This would lead to a concept of a unified pattern of response.

If, however, one postulates that the intended communication can occur in one or other response modality without the involvement of the other, then a concept of true substitutability is involved. The major problem with this, however, is to determine why one response mode is preferred to another and under what conditions. Formulated in this way the difficulties would be resolvable providing the communication mode(s) not being used were not

1. This raises the question as to whether minimalization or simplification of response in one channel or another may occur to reduce "wastage" or redundancy.

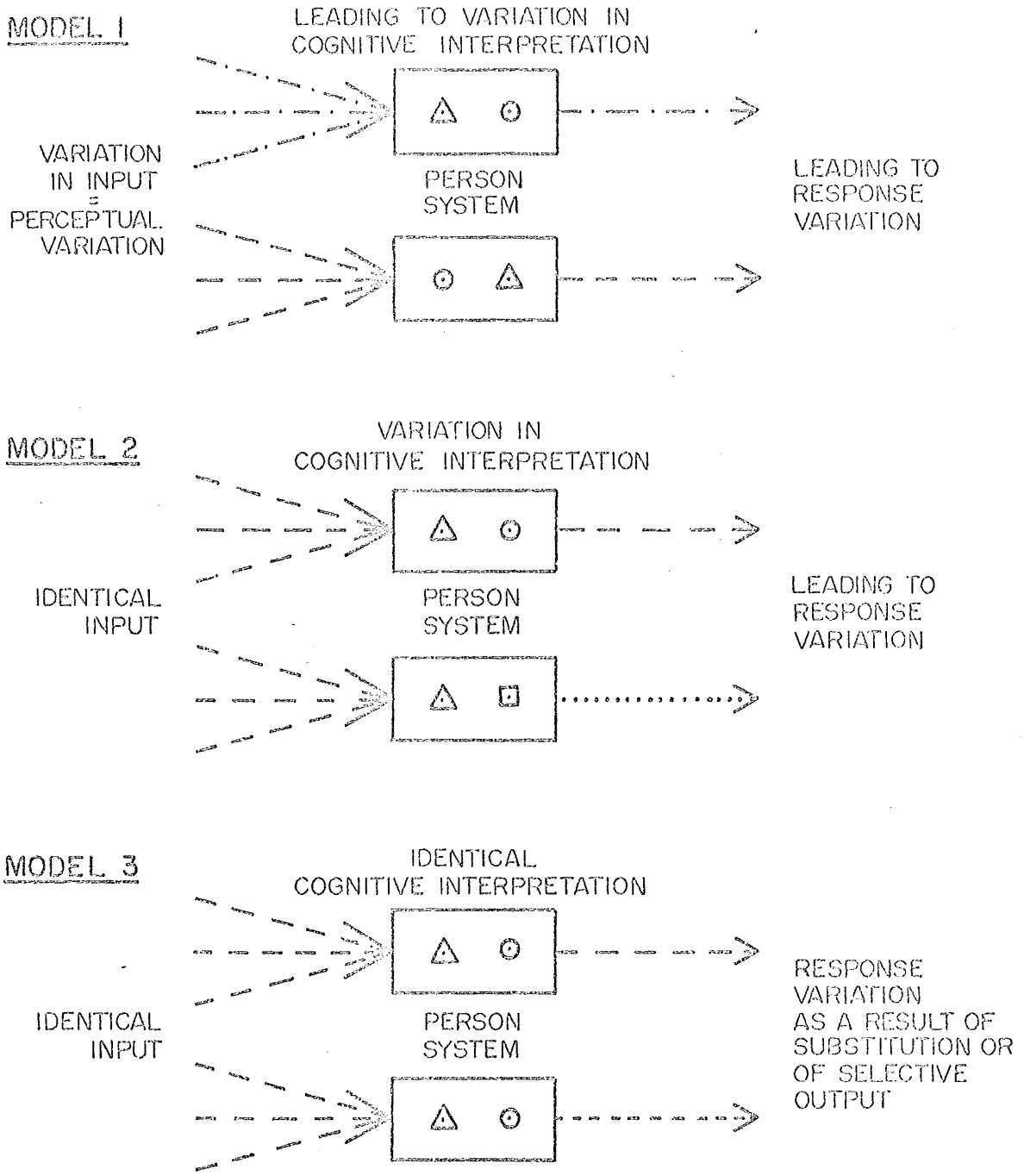
signalling anything. If, however, as has been suggested[1], it is possible to communicate conflicting messages through different response channels, then the implication is one of the divided functioning of the organism, with tremendous difficulties resulting for research.

The problems of substitutability are all the more daunting as variation in response under an apparently identical set of external variables may in fact be explained in a variety of ways (only one of which involves the substitution concept). It has been acknowledged by many researchers following the lead of Hall (1959, 1966) that there are cultural variations in perception. It follows from this that there may also be perceptual variation among individuals in some circumstances (particularly if they have been exposed to a mixed cultural heritage; there is in any

1. Scheflen (1972) for example stated: 'While the controls of the institution are being imposed kinesically, the lexical system can be used to imply democratic processes'.

case no guarantee that the external stimuli will have the same valency for all subjects). Secondly, it is possible that even if the external stimuli are perceived in an identical way, there may still be a different cognitive assessment of them (the implementation of alternative schemata to define the situation, Kuethe, 1963) or a differing degree of effective arousal (as a result of stress, satiation, habituation, etc.) so that again response variation may occur. Thirdly, the variation that occurs may be the result of subjects experssing their response through varying but equivalent response modalities (the substitutability postulate) or, however, through their trying in some circumstances to suppress their response or by their translating it into a symbolic equivalent which may not necessarily show any relationship to the various direct responses.

FIG. 2 : DIAGRAMMATIC PRESENTATION OF POSSIBLE MECHANISMS DETERMINING VARIATION IN RESPONSE



While some of the difficulties just presented can be controlled for in an experimental design, (by, for example, trying to discover how subjects perceive their environment, by testing for schemata variations, etc.), the problems raised by the principle of transformation or substitution may be difficult to overcome. This would not be a problem of course if the relationship between verbal and non-verbal response modes was one of over-determination, that is, if whatever was being expressed was being expressed through all response dimensions. If, however, the various response possibilities, both verbal and non-verbal, may stand in place of each other, then studies which concentrate exclusively, for example, on spatial responses may indeed register variations but may be unable to interpret these unless the equivalent expression in other response modalities can be identified. In other words, changes in one response modality, if adjusted for by changes in other expressive dimensions, only become significant if

the total field of field relationships is known. This would then lead on to an investigation of the variables which evoke one particular response modality in preference to the others (assuming this is of course subject to external variables and does not change as a result of satiation with one particular response mode).

The dilemma outlined may, however, provide its own solution. If it is possible to investigate a single response modality, in terms of the three possible sources of response variation, then the variations themselves may lead to hypothesis formulation rather than despondency.

2.v. OTHER CONCEPTUAL AND PHILOSOPHICAL PROBLEMS ARISING FROM THE EXISTING BODY OF THEORY AND THEIR CONSEQUENCES FOR A METHODOLOGY

Before it is possible to elucidate the philosophical concepts which underpin the varying hypotheses of non-verbal behaviour, it is important to summarize

these hypotheses since they by no means represent a unified viewpoint. That considerable conceptual variation exists is undoubtedly attributable to the fact that, despite an escalation of interest in non-verbal behaviours over the last ten years, non-verbal behaviour research is still essentially at a phase of data collection rather than hypothesis formulation (Sommer, 1969). Nevertheless very few pieces of research have been carried out (the exceptions would be the work of those following an ethological tradition in which data collection is the required and almost sacrosanct preliminary step) without at least some implicit hypotheses. The significant implied hypotheses are as follows:-

I. Non-verbal Responses Mean Something: They are Not Arbitrary or Chance Reactions

Either 1.a. They are a communication system (implying a possible intentionality of "sending a message"). Where this view is taken the responses are frequently called signals.

As such the non-verbal repertoire may be part of a composite communication system comprising verbal and non-verbal responses (in which case it is necessary to investigate the determinants of selection of response mode), or the non-verbal signals are regarded as an independent communication mode which exists parallel to and distinct from verbal communication. Those holding this latter position may however distinguish between those non-verbal behaviours which go together with language (e.g. the 'paralanguage' of Abercrombie, 1968) and those which form an independent system.

Or 1.b. They are or express affective reactions to situations but may not be explicitly, consciously or intentionally communicative.

Those who regard non-verbal responses in this light usually concentrate on isolating the variables which produce certain responses. They recognize that the responses may be interpretable but consider that the validity of interpretation cannot be

guaranteed.

It follows then, that if non-verbal responses are not arbitrary

II. i. If the same set of external variables can be replicated and if the same internal condition (i.e. internal variables) can be duplicated, the same non-verbal response or set of responses may be expected to occur.

This assumption has, however, in some theories been modified by I.ii. and II.iii.

II.ii. Replication of response(s) may however not occur because the response(s) may be expressed through a different non-verbal response set. (This is the concept of substitutability.)

II.iii. Replication of responses may occur if only the significant (dominant) variables are operating, i.e. whereas absolute replication of external and internal variables may be difficult to achieve (from an existentialist standpoint, impossible), this may not be necessary in order to produce identical

(statistically correlative) non-verbal responses, providing the determining variables are present.

Whichever basic theoretical premise is adhered to, there nevertheless remains the fundamental question of the extent to which the individual is in control of his non-verbal behaviour. As already indicated, the idea of a structural framework which determines non-verbal responses bespeaks their coherence and meaningfulness. Where diversity of opinion exists, however, is on the question whether the individual deliberates according to the structural constraints (i.e. whether the patterning of responses is incorporated into his conscious thought processes) or whether they exert an influence which the individual is neither aware of nor can counteract. It is to this next that we shall turn and particularly to the question of the level of consciousness of non-verbal behaviours.

The validity of much of the research into non-verbal behaviours hinges on the concept of consciousness. As already indicated divergent positions have been assumed

by workers in the field, ranging from those who consider that non-verbal responses may occur predominantly outside the conscious awareness level of the individual[1], to those who see non-verbal behaviours as at least able to be brought into conscious awareness at will and therefore, manipulatable by the individual[2]. If, however, non-verbal behaviour may at times be conscious and at other times occurs unconsciously('outside human awareness', Scheflen, 1972), one is confronted with the problem of assessing whether these varying levels of awareness affect the responses and how they are related to communicational intent[3]. There is the further suggestion too made by

1. Birdwhistell (1970) states: 'All kinesic research rests upon the assumption that, without the participants being necessarily aware of it, human beings are constantly engaged in adjustments to the presence and activities of other human beings'.
2. Argyle and his associates' introduction of non-verbal behavioural training as a therapeutic tool rests on the assumption that people can be made aware of their non-verbal responses and can be taught to control them (Sunday Times, May 18th, 1975).
3. This raises the question of whether the meaning of non-verbal behaviours may at times be dictated by some kind of internal structuring of which the individual is totally or partially unaware and at other times be subject to the conscious direction of the individual.

Scheflen (1972), that the phases of unawareness and awareness are sequential, so that once the individual is sensitized to non-verbal response dimensions, he can no longer respond 'naively' (this will be discussed further as Scheflen implies certain other things which are worthy of discussion).

On a philosophical level, there are two fundamental questions involved; first, whether it is possible for an individual to perform meaningful or purposive behaviours without some level or degree of rational involvement, and secondly, whether rationality and consciousness (or awareness) are essentially synonymous. These questions arise because at least some psychological thinking (notably psychoanalytical theorizing) is based on the premise that behaviours which are performed unconsciously[1] are irrational (i.e. are not apparently meaningful or logical, although they are analysable and

1. More specifically the behaviours are the symbolic expression of unconscious or instinctual needs. The unconscious is in essence chaotic, unstructured and not directly knowable or expressible.

interpretable). While the majority of researchers in the field are not of a psychoanalytical orientation, the use of the conceptual model of inside and outside awareness requires attention as the related concepts of intentionality and substitutability of non-verbal behaviours are linked with it.

If one views rationality[1] as an essential quality of being, one might postulate that this mind function may operate in all the various states of human existence. It follows then that consciousness is just one possible state. Thus, one might say that, while a dreaming or hallucinating subject may not be considered to be conscious (one might say he is experiencing unconscious content), his dreams or hallucinations are nevertheless subject to rational structuring, although the conceptual foundations to which he applies this rationalizing function may be subject to a different set of rules[2].

1. It is defined here as the implementation of a reasoning process, based on logic, to experiences.
2. The concepts may be redefined and allowed additional or different attributes but these new qualities will be treated in a logical fashion according to the new existential conditions created.

If this is the case, then the possibility of consistent, logical responses occurring 'outside human awareness' does not constitute a problem. It does, however, mean that if the responses are to external stimuli rather than to internal ones, the postulation of perceptual activity also taking place outside the conscious awareness level of the individual is necessitated.

If, however, on the other hand one assumes that consciousness is the only state in which one can know (reason) about oneself or the external environment, then any other condition (e.g. unconsciousness) must be outside the exercise of reason. Thus actions performed outside awareness (if equated with outside consciousness) must be outside rational and logical structuring. If, however, a structure can be identified, then logically they cannot be outside the bounds of consciousness (unless an innate structure is operative). The problematic is of course altered if, instead of juxtaposing a conscious and unconscious (aware/unaware) level of existence, one postulates various levels or degrees of

consciousness (on the premise that, if there is such a thing as unconsciousness, it cannot by its very nature be known as it is diametrically opposed to knowledge and awareness).

In fact, in the light of other theorizing about the development of a non-verbal repertoire, the acceptance of various consciousness levels seems the more reasonable. If one assumes that the non-verbal behavioural repertoire is largely a learned one (as suggested both by Hall, 1963, and Birdwhistell, 1970), then one may postulate that an initial phase of rational involvement would be a prerequisite for a secondary "forgetting" of the non-verbal response. What is then meant by the term 'outside human awareness' is a reduction of directed attention to the behaviours (so that they appear to be automatic adjustments to changes in stimuli, once the learning process is completed), rather than the removal of total consciousness from them. They may nevertheless constitute a part of the individual's general self-awareness.

The conclusions which must follow from this are of considerable importance in constructing research designs. If non-verbal behaviour can be brought to the attention of the individual through a sensitization to the effects his responses may have on others, or, if a person is already aware of his non-verbal responses, then it becomes necessary to discriminate between communicational intent and the actual effective state of the subject. Moreover, it seems unlikely that the response choice is simply between a spontaneous (automatic unconscious, outside awareness) signal and a deliberate (consciously chosen) one. It seems rather that, even if a subject may be at times aware of his non-verbal behaviours, the degree of awareness may itself be a fluctuating one and a determinant therefore of variation in overt response.

It is postulated that the individual may develop a habitual pattern of non-verbal responding which is part and parcel of his consciousness of himself. In the normal course of interactions the individual is not usually motivated to pay attention to his non-verbal

behaviours and in this sense he may be unaware of them. If, however, the situation is one in which he is either highly motivated or highly aroused (i.e. a stress situation), then he may become aware of his responses because they seem "different" from usual. In other words, whereas by habit approaches may be made without much deliberate attention, in a situation which is anxiety provoking an individual may suddenly notice his behaviour or be inhibited in response. Once too a certain level of consciousness is reached and this is presumably on a different level from the sudden 'self- consciousness' just described, then the question of deliberately trying to create certain impressions and of feigning is raised. One might from this suggest a continuum as follows:

SELF-CONSCIOUS AWARENESS ←	HABITUAL RESPONSE	→ CONSCIOUS AWARENESS
Response Inhibition (Minimalising of non-verbal responses or display of inappropriate/atypical signals)	Largely out of awareness (The individual may presumably tend habitually to either end of the continuum)	Planned(Manipulative) responses (With possible 'hysterical' acting out and response exaggeration)

It is perhaps pertinent at this point to look again at Scheflen's suggestion that '...only very recently has information about kinesics, dominance and territoriality become linguistically coded and therefore generally knowable. Previously, this social regulatary system operated outside human awareness'. He appears to suggest that consciousness of the non-verbal dimensions of behaviour is linked with the development of relevant concepts, so that behaviours which do not fit into a conceptual configuration must remain outside awareness. This implies a relationship between language and conscious awareness, which may or may not be the equivalent of a relationship between thought and consciousness (i.e. it raises the question whether there can be non-linguistic thought). If we revert back to the continuum of degrees of consciousness, what Scheflen could be interpreted as saying would be that non-verbal behaviour could not be used purposively (or manipulatively) because people were unaware of the goals which specific non-verbal responses were intended to

attain. However, applying Scheflen's own use of the concept of a temporal factor changing response consciousness, one might question whether the phase of unawareness might not be a subsequent one to that in which the cultural meaning has been lost. It has been postulated that non-verbal behaviours fulfil social regulatory functions and most researchers have concluded that these are predominantly culture specific. This means that on one level, consciousness or awareness is related to a knowledge of socially appropriate behaviours for identified situations (in which the meaning of the behaviour is also implicit in the response by cultural designation). While socially required behaviours might also conform to underlying mechanisms which are distinct from the cultural response determinations, and these might not have been understood, it must be asked whether the development of technical terms around such postulated mechanisms is to replace culturally defined understanding of non-verbal responses. Let us return again to the learning paradigm: social

behaviours and the intention of social behaviours may be taught and although an individual may reach a stage of implementing them with apparent ease and spontaneity, this does not mean that the cultural significance or interpretation of the behaviour is lost. If, however, a time is reached when the behaviours are taught without a cultural reasoning, then they may still be retained and reflection will produce an awareness of behaviour performed but not of behavioural meaning (i.e. what is lacking is not consciousness but understanding). It follows from this that in a situation in which clear culturally prescribed behaviours exist, self-consciousness may be coped with by a faithful fulfilment of the cultural prescription, while attention may be gained through a meticulous over-fulfilment of the social behaviour norm. Uncertainty in response may only occur when a cultural response framework is weakened or non-existent. This does not exclude the possibility in either situation that as a result of satiation with certain expected responses, an individual may resort to

minimal or novel response (i.e. the response might be conscious but have no meaning as such).

One of the important aspects of the thesis that non-verbal responses were performed outside awareness, or unconsciously, was that this was considered to guarantee the integrity of the response. Thus, it followed that while it was felt a subject could use deceptive ploys verbally, it was thought that those responses which occurred without rational oversight would convey an uncontaminated expression of the subject's true feelings. This conclusion appeared to be derived from the dichotomy considered to exist between emotions and intellect and which held that the former were the primary arousal state and more valid than controlled expression. We have already challenged the validity of this assumption and, while some may lament it, as it dispels the myth of the 'purity' or integrity of non-verbal responses, it is extremely important in terms of the assessment of much non-verbal behaviour and the construction of research designs.

In the first place, one can no longer assume that a single non-verbal response in a specific situation will be representative of that response in the non-verbal response repertoire of that individual and remain unvarying if other variables operating can be kept constant, for non-verbal behaviours are just as vulnerable to the arousal state of the organism as verbal responses. This means that those researchers who have tended to use deceptive devices[1] in order to obtain 'uncontaminated' responses, will not in fact have attained this. For while they may have reduced temporarily the level of attention given to responses apart from the sensitized one, this does not mean that other non-verbal responses may not be affected by the general arousal level produced by the experimental situation. The validity for assuming that other non-verbal response dimensions may be maintained according

1. The subject is given to understand that one thing is being observed, while in fact other things are being recorded.

to the usual response tendencies (i.e. at the habitual level of consciousness), could only be demonstrated if replication of the experimental situation occurred. One could then see whether habituation to the situation brought changes or not. Even then one might not have any absolute idea of the relationship between response, arousal level and degree of consciousness as replication might lead either to loss anxiety (as the task and situation became more familiar) or heightened anxiety (if subjects experienced mounting suspicion about the purpose of the replication). Furthermore, in a situation of increased arousal the subject might, if this were accompanied by self-awareness, control and correct the more grossly inappropriate non-verbal behaviours (e.g. those associated with fear and anxiety) or behave deliberately inappropriately with the aim of disproving the assumed hypothesis behind the experimental design.

A further important idea which paralleled the idea that non-verbal responses were purer than verbal

ones was the belief that one could 'feel' when a non-verbal response was not genuine. This led on to the whole question of interpreting the meaning of non-verbal behaviour. Once the recognition had been made that non-verbal behaviours could mean something, it was natural to try to establish some way of categorizing their meanings. The main methods employed to do this fell into two distinct but related approaches, namely encoding and decoding. The possibility of an individual being able to encode non-verbal behaviours[1] appeared to rest either on a high degree of awareness of the bodily movements which are produced in certain emotional states or to convey specific messages (such as one might for example expect an actor to possess), or on a direct link between non-verbal responses and the emotional content or intended meaning which they expressed.[2] If the former were correct, then only a portion of the

1. By encode was meant to perform certain meaningful non-verbal behavioural sequences at will.
2. In this case the arousal of particular feelings or the dramatisation of particular cognitive sets would trigger the related non-verbal responses.

population (those particularly sensitized) could be expected to produce convincing demonstrations of particular content or meaning. If the latter were true, then all individuals should be able to show the non-verbal behaviours related to particular states or intentions, providing that they are not 'contaminated' by other affective or cognitive content. While the research has been able to show that certain goals (e.g. gaining approval) can be attained by untrained subjects, the demonstration of emotions was far more difficult for them[1]. This may in fact mean that non-verbal behaviours fit together around cognitive intentions and interpretations which have emotional content, but that emotions do not have an 'independent existence' (i.e. people are not just happy, sad, angry but this is related to something). From this it follows that bald categorization of the meaning of non-verbal behaviours without consideration of contextual factors may be a fruitless exercise.

1. Ekman and Friesen carried out a considerable amount of work in this area.

This is particularly important as it casts quite a different light on the relationship between cognition and non-verbal response. It could be postulated that either the verbal or the non-verbal responses may be the more complete expression of the internal response (thought/feeling) depending on the degree of differentiation of these possible response modes. If the subject is verbally more fluent the verbal response may be superior to the non-verbal experession; in other words the 'translation' into a non-verbal dimension may be hindered by physical ineptness, poor coordination or even physical disability. For those, however, who lack verbal acuity, non-verbal responses may represent a more sensitive expression of intention/meaning.[1]

If encoding relies on an introspective method, decoding is based on the assumption that non-verbal behaviours can be interpreted by others. This has been taken to mean that the observer, on the basis of his

1. This is not to imply that some individuals may not have good command of both modes of expression.

own cultural training can make inferences about the state (emotional condition/arousal level) of the other individual from the responses he perceives. Consequently photography and later videotapes and films were used to record non-verbal behaviours which were shown to judges who were asked to assess such things as whether the person was depressed (Waxer, 1974), happy, etc., or from a set of non-verbal components people might be asked to assemble for example a happy face, a face at rest, an irritable face (Cuceloglu, in ed. Speer, 1972). The validity in these instances of the results rested on the consensus of the judges (the decoders), not, in the case of the "live" non-verbal displays, on whether the subject agreed with the assessment. This meant that an individual who had learned atypical responses, had failed to learn them or who had made learning errors, might be misinterpreted. Nevertheless the possibility that normal subjects do have some knowledge and understanding of various dimensions of non-verbal behaviour is both challenging and also carries

a warning to researchers who behave as if this were not so.

2.vi. THE PLACE OF SPATIAL BEHAVIOURS WITHIN RESEARCH INTO NON-VERBAL RESPONSES

In the preceding chapters some of the theoretical and methodological difficulties affecting the research into non-verbal behaviours have been elucidated and where appropriate the implications for spatial responses have been noted. As has been pointed out by Hall (1966), spatial responses were initially a somewhat neglected dimension of non-verbal behaviour. Once, however, researchers did become aware of them, they became almost inextricably involved in distinguishing between interactional and environmental variables which affected spatial responses. Furthermore, as indicated, many of the problems and discrepancies arising from the initiating premises have not yet been resolved. Undoubtedly the most daunting is that associated with the

concept of substitutability. However, as suggested in the preceding section, other possible causes of response variance must first be explored, as they may remove the necessity for the concept, in that it may be possible to demonstrate that variables operating in the environment or internal factors may determine the selected behavioural response dimension (i.e. while response through one modality or another may be equivalent, it may still be possible to establish when it will occur in one way or another).

In the main, the approach to spatial behaviour which developed out of the general theory of non-verbal communication was based on the assumption that space could be treated as a distinctive channel or sub-system (sometimes allotted the name 'proxemics'). Only Argyle and his associates really postulated a spatial adjustment determined by other response modalities. Common to all the variations in approach, however, was the awareness that space and spatial responses were intimately linked with concepts such as

territoriality and personal space which brought with them both theoretical implications and ideational frameworks.

In the following section these space-related concepts will be explored and the varying approaches to spatial responses in the research carried out to date will be outlined. The separateness of the differing approaches is one of bias and emphasis rather than an absolute one. It remains true nevertheless that, just as other aspects of non-verbal behaviour could be pursued from quite divergent theoretical positions, the same has occurred in the investigation of spatial responses.

3. RESEARCH INTO SPATIAL BEHAVIOURS

3.i. THE CONCEPT OF TERRITORIALITY

There can be little doubt that research into spatial behaviours has been inspired and dominated by the concept

of territoriality. For that reason it is important both to understand the diversity of use to which the concept has been put and to assess the extent to which and the form in which territorial behaviour has been demonstrated in them. From this we should be able to relate the territorial mode (or modes) of spatial expression to other spatial responses (a step that is not often taken).

The idea of territoriality existed prior to the scientific use of the term. This is an important point because it has influenced what we have tended to expect to find in our research. It was derived from the Latin and expressed a particular type of relationship between people and land based on division and claim. This particular mode of relationship, it is suggested, is related to sedentary/agrarian cultures[1] and in particular to the evolution of countries/nations, i.e. it has

1. It seems possible, however, that for the individual the dominant relationship may still be with the earth rather than with a territory as such.

political connotations.

The psychological use of the concept of territoriality was however derived from the ethologists, who had in turn inherited it from their naturalist forerunners. It had been noted by such men as Willoughby, Pernauer and Spalding, that some species of birds, such as robins, exhibited behaviours which appeared to be directly related to the physical environment. While the term carried with it the idea of the occupation or possession of an area, what the naturalists had actually observed was a relationship between the area in which the male robin sang and its attacks on conspecifics which entered that area (although they postulated that the purpose of the singing was actually to avoid such confrontations). They had noted further, both in robins and other species, that once the nest was completed this became the focal point of that area in that the level of defensive response was at its most intense at the nest and decreased gradually to the point where that particular

bird and adjacent ones of the same species were at a point between their nesting areas where their relative physical strengths were balanced. In other words, it implied not so much possession (as an awareness of having, claiming) but a dynamic relationship between conspecifics. There was no unmodifiable 'claim': what was 'claimed' was simply that part of the environment which in its particular state of health, period in its reproductive cycle, period in its lifetime etc., it was able to maintain against encroachments of others of its species, who were compelled to meet similar biological needs within the same ecological niche.

Although the original observations lacked the type of verification sought after by the ethologists, they nevertheless provided both a stimulus and a conceptual hypothesis for further more precise research. What this revealed was the tremendous diversity in the way different species exhibited an interaction between themselves, the environment and others of their species.

It was apparent, for example, that the nature of the spatial relationship might be a differentiated one producing variations in response depending on the type of relationship that was operative. To try and categorize this Roos (1968) proposed a four-fold division of types of space-animal interaction with resultant alteration of response to conspecifics depending on area type; these were, the range, which was the area traversed, the territory, the area defended, the core area, the area preponderantly occupied, and the home, the sleeping area. Such a division was however of only limited usefulness as the land-space relationship and territorial defense behaviours in particular might be exhibited in all of the latter three types of area under specific conditions and at specific times. A further factor that emerged from studies carried out was that territorial defense behaviours showed temporal variation, so that some species for example would only behave

territorally at particular times such as mate selection (e.g. the Ugandan cob, the Bird of Paradise), breeding, or rearing of young (red deer), whereas others appeared to need to maintain a consistent delineation of their spatial area and used a variety of marking devices (olfactory - wolves, dogs; acoustic- lemurs and some monkeys, etc.) to help them do this. It was evident too that the freedom of choice and possibility of variation of a selected piece of land might range from absolutely no freedom at all, as in the case of the seal, which must return to its own precise birth place to give birth to its young, to species constrained only by the types of terrain (in terms predominantly of food supply) which they require to survive.

To try and allow for all these variations in the nature of a so-called territorial response Hediger (1961) advanced a definition using defensive behaviour as the primary criterion; it was that a territory was 'that section of space that is defended by the occupying

individual or social unit and that has a definite size (within limits typical of a species) as well as a specific internal structure'. He also suggested in another definition a further criterion for distinguishing and identifying a territory, namely, that it was an area 'which is first rendered distinctive by its owner in a particular way'. Having put forward these criteria he could then differentiate between territorial responses, which were seen as related to fixed-feature space, and other spatial responses such as 'social distance' and 'individual distance' (these will be discussed further under the section on the concept of personal space).

This approach was not however taken by all researchers as some found it more useful to relate territorial response to purpose or function. Carpenter (1958) had for example proposed thirty-two distinctive functions of territory such as ensuring propagation, protecting against over-exploitation of that part of the environment on which a species defends for its living, etc. Darling (1952) had suggested it also functioned to provide a

periphery. The cumulative or overall function could be summarized as 'adaptive and facilitative of group functioning'. Those, however, who committed themselves to using the concept of territoriality in this rather wider way did not distinguish between land-based or fixed-feature defense and spatial interactions between conspecifics to establish rank (position in hierarchy), which might involve aggressive encounters but were not directly involved with a particular spatial allocation[1]. It has since been suggested that environmentally bound spatial responses may be a more primitive alternative to the establishment of a hierarchy; however they do not appear in all instances to be mutually exclusive, but probably serve different purposes, one or other taking precedence over the other at specific times.

Scheflen (1972) has been one of the few to propose at least three distinctive modes of spatial interaction,

1. Rank might nevertheless determine both the size and the position of the defended area and certainly, in some species, defeat in conspecific competition might result in expulsion from the social unit.

all of which he suggested had social control functions; these were 'the territorial, reciprocal and kinesic mechanism'. He postulated, moreover, that these were historically earlier interaction regulators than language in humans but that the evolution of language did not render them obsolete. Hall (1959) took a similar position, although he saw spatial responses under the overall heading of territoriality, and indicated that he considered them infra-cultural, that is 'behaviour that preceeded culture but later became elaborated by man into culture'.

In the main the concept of territoriality has been applied to human behaviour with the expectation of analogous but not identical responses to those observed in various species of animals. The basis for such an expectation appears to be allied to the thought of an evolutionary continuum and the probability that if territorial behaviours have survival value for other species, they may be implemented in some form within the human behavioural repertoire for the same purposes. In

other words, while diversity of actual spatial response mode was anticipated, common biological aims were postulated. The nature of the analogy was however far from an exact one, for on the whole the postulation of an innate component to human spatial behaviours, while acknowledged as a possibility, was nevertheless overshadowed by an awareness of culture-specific attitudes to land ownership and socially prescribed spatial demarcations.

Based, however, on the assumption that humans do exhibit territory maintenance and territorial defense behaviours, or at least that they show responses which seem comparable to those observed in animal species, Sundstrom and Altman (1972) postulated several distinctions between animal and human territoriality. They stated for example, that human use of territory is very variable, is learned rather than genetic, and that territorial defence (in the form of overt aggression) is much less clearcut. Although they did not

say so, the implicit suggestion is that mankind has evolved a commonly shared response modality into something quite distinctive, which has ceased to be functional in terms of primary survival needs and has been developed to satisfy secondary (cultural and personal) goals. The nature and process of this transition are however by no means clear.

Despite this suggestion that territorial behaviours may function in man for different reasons and the anticipation that human territorial responses may be exceedingly complex[1] the actual definitions of human territoriality do not appear very different from those derived from studies of other species. This probably rests firstly on the fact that the ethological term was essentially descriptive and had been used for almost any type of relationship with the environment which contained a spatial dimension. Secondly, the definitions have tended to be operational, i.e. an

1. Patterson (1968) for example suggested that 'this tendency - i.e. for territorality - exists in a very complicated form in man'. He attributed his statement to Hall (1958).

observed interaction between an individual and either an object or spatial area was designated a territorial response. This was taken in the case of the studies of Altman and his associates to include the preferential or exclusive use of a place or an object by one particular individual or group (Altman and Haythorn, 1967; Altman, 1970, 'the essential character of human territorial behaviour is the appropriation of objects or regions of space by an individual or group of individuals for their own exclusive use...'). It was however also conceptualized as linked with spatial defense behaviours, (Pastalan, 1970b:'defends as an exclusive preserve'; Meisels and Dosey, 1971, refer to 'defensive or self-protective processes').

The simplicity of the definitional situation and the apparent ease with which so-called human territorial responses can be observed may however be misleading, for it appears rather that we are in a situation where we actually lack knowledge of human territoriality. Thus Cheyne and Efran (1972) state: "the day is still probably

quite far off when as much will be known about human territorial behaviour as is currently known about these behaviours in a variety of mammals...." and ".....so little is as yet known about human territoriality that many of the concepts and hypotheses which are employed are based on generalisations from the animal literature..."; similarly Edney in 1974 writes: 'Unfortunately the available information on human territoriality is limited and unsystematic; ideas in the area are loose, definitional problems exist and theories have never progressed beyond an elementary and informal stage...", What we seem in fact to have at present is essentially a semantic problem (as noted by Sommer and Becker, 1969). This will not be delineated.

Territoriality has come to be used descriptively for almost all spatial responses (at times it has been used as the category into which all spatial responses fall, Sommer, 1969; in other instances it has been viewed as a subcategory of a group of behaviours related to

'spacing', McBride, 1968). If the term is meant descriptively, as in some of the operational definitions (e.g. Altman and Haythorn, 1967), to indicate an observed, empirically replicable, interactional correlation between an individual and a part of his environment, this may be quite acceptable. The concept has however, also been used to imply a mechanism or internal 'set', (for example Horowitz, 1963, spoke of a 'territorial system' and Scheflen, 1972, stated: '....the territorial (and other) mechanisms of social control have not disappeared as language has evolved.....'), with the subsequent expectation that some kind of coherence and unity should be able to be postulated, and presumably, with the development of an appropriate methodology, demonstrated.

Moreover the divergent use of the concept either to refer specifically to an interaction between an individual and fixed-feature space or to regard it as a dimension of interpersonal relationships (especially in relation to dominance) has been carried over into

studies of human behaviour. Those who subscribed predominantly to the former viewpoint, (e.g. Esser et al., 1965; Altman and Haythorn, 1967; Duncan, 1969) tended to treat territorial behaviours as related to concrete demarcations of the actual physical environment. These designated areas were the 'territories' and were associated in some instances with markers to distinguish them from the surrounding environment (Sommer, 1969). With humans, however, the concept of territory was linked with that of property rights and with the social maintenance of 'claims'. It was not a balance of 'strengths' but was upheld by the support of a social framework, thereby introducing such factors as the temporal extension of a land claim according to cultural rules of inheritance and the existence of claims which were unrelated to actual needs but which were enmeshed with social 'prestige'. It is scarcely surprising, then, that even those who aligned themselves with the concept of territoriality as a spatial response to the actual environment (e.g. Lyman and Scott, 1967) were conscious

of the interpersonal implications of territorial behaviour. Altman and Haythorn (1967), for example, saw the occupation of particular areas as related to a 'developmental sequence of territorial behaviour' which evolved out of the interpersonal situation. Other researchers mobilized additional concepts such as 'interactional territories' and 'temporary territories', to cover comparable responses to those exhibited in relation to property (i.e. owned space) but which were related exclusively to the space needed to service an ongoing encounter. They saw these 'temporary territories', however, as parallel behaviours rather than as inter-related with territory as owned space. While the interpersonal utilization of space could be described as territorial in so far as certain defensive manoeuvres and internal spatial adjustments were observed, the difficulties of stretching the concept in this way and the limitations of the definition become apparent. This can perhaps be seen even more succinctly from attempts to apply the definition to all situations where an

apparent spatial claim and/or defensive behaviour has been observed. Lyman and Scott (1967) postulated the existence of 'public territories', 'home territories', 'bodies territories' and 'interactional territories', and Goffman (1972) differentiated between 'fixed, situational and egocentric territories'. While these divisions have undoubtedly resulted in a sensitizing to the sociological dimensions of any attempt to regard the environment as a series of territorial claims, they have also led to a blurring of the meaning of territory. In particular they have indicated a link between behaviours which may not really be related in terms of cause or purpose except in as far as they operate within the same dimension (space).

It has already been suggested that part of the difficulty hinges on two different ways of using the territoriality concept, that is, either descriptively, or implying an underlying mechanism. We will now discuss what has been understood by those whose conceptualizing has rested on a territorial system or mechanism model,

although again it will become evident that there is divergency of opinion. At one pole there have been those who have regarded man's occupation of space as a direct corollary of his biological origin. From this standpoint, what Ardrey has called 'the territorial imperative' (1967), is an urge or drive which has demand characteristics and which must find spatial expression. While modern psychologists have remained generally reticent to postulate an instinctive or innate basis to any human behaviour, others interested in spatial behaviours but reared in different disciplines have been less cautious. Barton (1966) stated quite categorically: 'man, like other animals, has territorial instincts' and Ardrey (1967) exposed the basic position both blatantly and somewhat naively, when he wrote: 'man's territorial nature is inherent and of evolutionary origin' and 'the disposition to possess territory is innate'. However, the postulation of innate or instinctive basis to spatial claim behaviours still has to deal with diversity of expression as well as the

question of the degree of rigidity in response. Ethologists and biologists (e.g. Portmann), while accepting an instinctive determinant of human behaviour, have tended to regard this as related in a different way to behavioural responses of other species. While a predominant characteristic of animal territorial behaviours is their relative rigidity for a particular species (they are triggered by specific stimuli and frequently are linked or chained in an action/interactional sequence), it is considered that man's behaviour, if related to a genetically inherited need or inclination, is nevertheless flexible. It follows then from this that the urge or readiness for a territorial (possessive/defensive) relationship may be satisfied in a variety of different ways, including through symbolic substitutes/equivalents. This is not to deny the presence of an innate 'source' (or structure) which requires some kind of expression and fulfilment but is rather suggesting that the constraint is one of having to channel the particular arousal, not the channel itself. This means

that the limits of structural expression are determined by the intellectual level of the individual and the degree to which he can create imaginative variations to satisfy the drive.

At the other pole to theories of an instinctive determination of territoriality is the belief that territorial behaviours are culturally governed and learned. Moreover it is to the distinctive framework of the total cultural system that territorial behaviours must conform and which constrains their expressive form. This structural perspective had been derived from the influence of structural linguistics and structural anthropology which saw all cultural modes as a related system. From this viewpoint 'territoriality' is a mental or conceptual 'set' developed out of cumulative experiences of appropriate responses which have both been imitated from and 'reinforced' by others. Birdwhistell (1970) expressed this position when he spoke of territorial behaviours as 'intricately patterned and learned'. This appears too to be the position of

Kuethe, 1963, although he did not use the territoriality concept as such.

Others, such as Hall (1959), although influenced to some extent by and essentially a believer in a culturally determined structuralism, nevertheless regarded territoriality as 'infra-cultural'. It is a 'primary message system' which existed before culture (and before man), as a modality with survival value, but the expression of which was influenced by culturally acquired spatial habits. Goffman (1969) also tried to distinguish because the basic potential for territory and its conversion into overt behaviour (although not without a certain semantic confusion). He stated that '...different social groupings express such attributes (or as he also writes, bare attributes) as....territory....by means of a distinctive, complex, cultural configuration'. What, however, was not clarified was the extent to which or the form in which the territorial tendency or attitude influenced the social structuring of territory. It might be postulated that the conceptual 'set'

(the social response) would be activated by the individual's interpretation or identification of the situation as congruent with that set (presumably employing such axiomatic concepts as 'belonging to', 'possessed by', etc.). It may be speculated that it could be the territorial attitude or message system which would enliven these concepts with affective content.

In as far as territoriality is regarded exclusively as a culturally determined spatial response 'set', it is necessary to investigate what other response sets are operative, which have a spatial dimension, and how these conceptual schemata relate to each other (this raises the question of course, of hierarchy). Clearly too, if these concepts are entirely culturally determined, territoriality will be culturally distinctive. This then means that the related affective components attributed to territoriality, such as possessiveness, desire for privacy, etc., will also only have meaning in terms of the cultural framework as a whole. Cross-cultural comparison would then need to involve both a

delineation of spatial responses which appear to be related to the 'territoriality' concept and an investigation of the culturally-specific meaning of 'territoriality'.

If, however, territoriality is a commonly shared human need, or as Altman (1970) refers to it, in terms of purpose, as '...geared to satisfying certain primary and secondary motivational states of individuals' (the former would presumably be the common denominator with some kind of biological basis), then the aim of research should be to investigate and establish the dimensions of the primary or basic mechanism (or affective motivational core) so that this can be differentiated from the cultural over-lay. For while the latter may well have cultural significance, it may not be of essential survival value for man.

The complexity and variation of the human situation may, however, make it difficult, if not impossible, to demonstrate conclusively that a commonly shared territorial response occurs. For while it has been

observed that many people appear to make claims on the exclusive usage of particular areas, this is by no means true in all cultures nor true for all individuals. Indeed it could be argued that what is commonly shared is rather existence in a physical, three dimensional world. By the virtue then of the nature of this existence some type of response to a physical spatial dimension must occur. It follows then that even catatonic withdrawal or transcendental meditation are related to or a movement away from the perception - however culturally distinctive or divergent - of an 'other', an 'out there'. The existence within space however, is not to be equated with territoriality, which includes the idea of ownership, as is aptly illustrated by the notion of many of the North American indian tribes that land space cannot be possessed. This argument could be supported further from a more theoretical standpoint. If one of man's distinctive characteristics is freedom of choice (e.g. to have or not to have, to own or not to own), he is able by

exercising his will to reject territorial bonding (he can leave his land, home etc.). In addition, and somewhat less philosophically, it could be maintained that territorial responses are only one possible mode of psychological adjustment to a spatial dimension. It is to this that we shall now turn.

The idea of a psychic investment or involvement in territorial behaviour has been suggested by several writers. Pastalan (1970b) stated that the establishment of a territory involved 'psychological identification with the place, symbolized by attitudes of possessiveness and arrangements of objects in the area', although he did not discuss the process itself. Horowitz (1968) also tended to work with an almost exclusively mental model of territorial space in which territorial perimeters might be solely mental projections of the individual. Thus he stated: '...territorial space....does not necessarily have geographic reality, it may be defined only by the behavioural responses of the individual who

is occupying or intruding upon it'. He did not, however, discuss whether this internalisation of territory was the result of his subjects living in an environment which could at best be only temporarily 'possessed' or because they did not desire to actually possess such a space (i.e. a psychiatric clinic).

There appears indeed to have been virtually no attempt made to understand spatial responses from an intrapsychic perspective. It is suggested here that the observed variations in response to space and the degree to which an individual may feel constrained to maintain a distinctive area as his own (whether permanently or temporarily) may be related to his habitual mode of psychological adjustment to a spatial dimension. Thus, while it is acknowledged that there are both cultural and ecological determinants, which may relatively uniformly affect a particular population, it nevertheless seems possible that these may be modified by the individual's way of maintaining his identity, and indeed by whether

he is culturally constrained to have an individual identity. Nevertheless each individual during the course of development does experience various psychological modes of incorporating desired parts of the external environment into himself as well as learning means of differentiating himself from that environment as a whole. It is particularly the psychological modes of inclusion which will interest us here.

On an exclusively psychological level the 'claim' of an area or object is seen as related to the projection of emotions and qualities into external space. Projection is in this sense used simply to express the extending into the environment of feelings by the individual, not in the usual psychoanalytical use of the term for the 'expelling' of negative feelings into the external surroundings as a defence mechanism. It is suggested that this initial 'outlay' of emotion is the first phase of a bonding process which is succeeded by an introjective phase in which the physical object is taken back into the individual in symbolic form.

It could be considered to be a parallel process to the bonding to other humans whereby the introjective phase enables the child to cope with absences of his mother as he is now able to comfort himself with the remembered image.

An individual who functions predominantly or exclusively at the primary phase of emotionally investing objects, is dependent on the actual physical presence of those objects. Should these objects be removed, he will presumably feel distressed (possibly to the extent of experiencing a mourning process for the loss of the object into which he has projected his feelings) and may feel exceedingly threatened to the point where his sense of identity and mental integration may be disrupted.

Projection is however, as already indicated, not the only possible mechanism for servicing the individual's sense of oneness or integration.

In the functionally opposite and developmentally later mode of identity maintenance, introjection, the externally significant (often cathected with symbolic

content) are taken into the individual on a mental level and a subsequent magical or mystical sense of oneness with things results. This oneness, once achieved, continues irrespective of whether the objects are always there or not, or whether they are used by others. This reduces the need for actual possession of them. It follows then from this that if an individual has succeeded in introjecting at least some of those objects and places which are precious to him, he can cope with their physical disappearance or removal better as the symbolized or spiritualized objects remain a part of him.

While the exclusive use of introjection as a mode of environment management may place the individual in danger of losing contact with concrete reality, the inability to introject anything may lead to a debilitating dependency on material objects. It seems likely, however, that specific conditions must be met for introjection to occur. Firstly the physical reality must at least in come measure 'match' with the

previously internalized 'idealized' objects. Secondly, the external objects which the individual desires to introject cannot be too unfamiliar, as extreme strangeness may produce too high a level of arousal for introjection to occur. It is possible, indeed, that the objects an individual has internalized stand in a relationship to each other and form some kind of composite image. Furthermore as pointed out by Anna Freud (1937, English translation), 'introjection from the outside world into the ego could not be said to have the effect of enriching the latter unless there were already a clear differentiation between that which belonged to the one and that which belonged to the other', that is, a certain stage of conscious identity must be achieved before introjected objects can be utilized to bolster it.

While it has been postulated that people may show possessiveness about ideas (Altman, 1970), it is suggested that this probably only occurs when the introjected images (the 'knowledge' acquired, the

'experiences' stored, etc.) are inadequate to maintain a comfortable level of self-esteem. Moreover it is doubtful whether this can occur until the stage of abstract or formal thought (Piaget, 1950), which, it now seems not all individuals achieve. In the main therefore, it would be expected that 'possessiveness' as the quality and intensity of ownership, would normally only be demonstrated behaviourally by those who have made an emotional investment in actual external objects which can in reality be removed or intruded upon. If this can be shown to be correct, then territorial behaviour will be most intense by those who rely on external areas or objects to support roles they enact (Proshansky et. al., 1970a) or more fundamentally to maintain their sense of selfhood (Colman, 1968). The idea of an emotional investment in objects throws a light too on the meaning and effect of the forms of territorial encroachment delineated by Lyman and Scott (1967; they were violation, invasion and contamination). A negative affective response to the use of an object or

place by another person only has meaning if the offended person stands in such a relationship to the object or place that he feels hurt or damaged by the act, as the action is in itself harmless (even if the intruder destroys the object or damages the place, the 'owner' is not hurt except to the extent he is emotionally bound to the place or object). Although most individuals will have projected feelings into certain things or places, it follows from the above that an individual need not necessarily behave territorially. This was recognised by Altman and Haythorn (1967) who observed that people might show varying levels of territoriality (from low to high).

The insights gained so far allow certain other behaviours which have been considered territorial but which involve actual ownership of fixed-feature space to be understood or at least to be regarded in a different way. It has been postulated that the emotional investment which an individual will make in external objects is the

psychological dimension of ownership or possession. This being the case, it may be surmised that space appropriation (claiming for use) would necessitate a lesser degree of affective involvement than spatial ownership (which contains the idea of maintaining or holding indefinitely). Indeed the study of Edney (1972) would seem to indicate that for any kind of affective investment in external objects or areas to occur, a knowledge of continuing usage of them is a prerequisite. Once, however, this has happened, it seems that that psychological relationship can be retained despite absences (i.e. temporal and spatial distancing) from the place or thing. That this is so has been demonstrated by the work of Sommer and his associates with the use of markers. The effectiveness of depositing an object to maintain a spatial area rests on the relationship which is understood between the person leaving the object and that object by those in the surrounding environment, for if this were not so, then the assumption would be made that the object were lost or

discarded. Certainly there may be some constraints placed on the nature and value of the object in that, first, it must be environmentally appropriate. A sleeping bag marking a place in an overnight queue for concert tickets would be more situationally appropriate than a pile of lecture notes or books, whereas the former in a library would cause consternation or amusement, because the claim would both be situationally inappropriate and would contravene permitted spatial usage within that area. It must also appear to have been deliberately placed, probably must be of limited value (e.g. there may be a value beyond which there would be a declining perception of the situation as one of spatial reservation and an increasing one of someone having lost something), and will lose its potency as time goes on (Sommer and Becker, 1969).

To return again to the variation in degrees of emotional involvement between space appropriation and space ownership. One of the results of the increased interest in spatial behaviour has been the recognition

of what has been called 'temporary territories'. By this is understood the spatial demand behaviours exhibited by those who wish to make a temporally restricted usage of public space (Cheyne and Efran, 1972; Efran and Cheyne, 1973; Knowles, 1973). From these studies it seems that the spatial demand for exclusivity of use for the period of an interaction is a prerequisite for an effective interaction to take place. However, once the interpersonal task is completed the emotional involvement with the place is presumed to cease (except in so far as the experience at that time may be linked in the memory with that place), in that the defensive or 'claim' behaviours stop. The emotional involvement with the environment then, has been only to the extent necessary to achieve the interactional goal.

While the awareness has been expressed that space claiming behaviours may follow some kind of temporal sequence (Altman et. al., 1971), so that spatial appropriation by repeated use and behaviours which are intended to discourage others from attempting to occupy

or use a particular area already occupied, may represent distinctive phases in a single process, this needs to be related to the type of space in which the behaviour occurs. In other words, it is suggested that the conditions under which so-called territorial behaviour develops may need to be examined not simply in terms of a temporal continuation but also in terms of the degree of appropriation which is possible in view of the type of space which is occupied (i.e. following the concept of types of spatial delineation proposed by Lyman and Scott, 1967). We do not yet know whether variations in spatial response are evoked according to the differentiation of the environment in terms of ownerships nor whether the ascribed dominance/influence of the owner may have inhibitive effects or ameliorative ones. That the latter might occur is suggested on the basis of identification which is considered in the context of other humans as an interaction between an emotional investment in the admired person and modelling. If this has occurred it is possible that an individual may

demonstrate territorial defensive behaviours not on his own behalf but on behalf of the other person. On the other hand, if the individual cannot, or does not wish to, identify with the owner of the land, and he has been unable to introject objects or places to maintain his own ongoing sense of identity when in such a situation, he may exhibit behaviours which are intended to retain his psychic integration or are demonstrative of his having lost it. Some psychiatric behaviours may possibly be understood in this way.

It becomes apparent that there may be quite different ways of analysing spatial responses with a territorial defence/possession component from those so far utilized. Moreover, it may in fact prove more valid to regard environmentally-related spatial behaviours as a possible response (perhaps of a range of potential responses), which is subject to the complex interaction of certain combinations of independent variables wihin more general behavioural categories. As yet, however, the inter-relatedness of these independent variables, while hinted

at by the research carried out to date, has still to be conclusively demonstrated empirically. It does nevertheless seem quite reasonable to substitute the 'territoriality' concept as a mechanism in its own right and instead postulate other mechanisms which call forth a 'territorial response'[1].

There have to date been three major attempts to provide such wider conceptual frameworks which lead to a variety of spatial adjusts. Argyle and his colleagues have worked with the intimacy concept and proposed that spatial responses are balanced by other non-verbal behaviours (e.g. eye-contact) to retain the emotional equilibrium of the individual. To date this model has not been applied to territorial behaviour, although presumably the latter could be regarded as designed to keep 'threats' to the equilibrium within a limited range and reduce the need for the more potentially arousing and strenuous interactional spatial balance manoeuvres. This could

1. The possibility that some kind of interaction might occur between a genetically-inherited and culturally conditioned territorality conceptual set and these variables cannot yet, however, be eliminated.

of course be tested empirically. Altman (1975) put forward the theory that all spatial responses are hinged to the concept of privacy. While it is not denied that territorial and other spatial behaviours may serve to enhance or maintain privacy, the possibility that privacy can be achieved purely by psychological means makes this questionable[1]. Moreover to attain intimacy, which is considered as necessary as privacy for overall psychological adjustment and growth, in some situations spatial separateness must be sacrificed to achieve a 'privacy-a-deux'. The third concept which has been proposed as the determinant of territorial and other spatial responses is density. This is more by implication than by direct statement and is based on analogies with animal research. The effects of density on spatial behaviour will be discussed in a separate chapter.

The differentiation of territorial responses from

1. This is not to deny that there are some individuals who possibly do not have an 'inner space' and who may need to use territorial and other spatial adjustments to substitute for it.

other spatial responses is a far from clear one. For example, some writers appear to equate personal space with what has been called 'body territory' or 'portable territory'. Those who regard it in this way tend to share some of the same expectations of it as those who call it personal space, for example, in assuming that each individual has one and that the body is its centre. Meisels and Dosey (1971)'s comment that '....hostile subjects counterattacked or retaliated by invading the experimenter's territory' is an apt illustration of this. Other researchers, while appearing to wish to distinguish between personal space defence and protection of one's territory, appear unable to do so. Sommer (1969) states, for example, that 'defence of personal space is so entangled with defence of an immediate territory that one sees them as part of a single process....the defence of privacy'. Argyle (1975) also appears to regard personal spaces as different from personal territories, which are again distinct from home

territories. He fails, however, to specify the nature of these differences. The situation is further complicated by some researchers treating human territoriality as an 'umbrella' concept for a range of spatial responses (e.g. Efran and Cheyne 1973).

Sommer (1969) commented that 'a society compensates for blurred social distinctions by clear spatial ones'. This conclusion has not been demonstrated empirically and indeed stands open to challenge from several angles. It could be argued from Sommer's statement that the general disorganisation of Western spatial behaviours as demonstrated by the definitional confusion may reflect the predominant use of clear social distinctions instead of spatial ones. This is disputed. While western society undoubtedly meets some of those criteria put forward by Hallowell (1961, ed. Washburn) as incompatible with territoriality, namely a 'more complex social composition and role differentiation' (he of course argued from the viewpoint that territoriality hindered social interaction of a higher order), it is questioned

whether social distinctions are as clear as they once were. Moreover, if one considers the Indian caste system, it appears that clear social distinctions and clear spatial requirements may go hand in hand. This seems also to hold true for the interrelationship of spatial demarcations/restrictions and designated social identity in many primitive societies. Thus it seems possible that an imprecision in spatial parameters may be related either to changes in the social structure or to a loss of a clear social definition.

One cannot but be aware of the proliferation of territories, so much so that one cannot but ask whether the term, and with it the concept of territoriality has not, rather like the fate afforded the instinct concept, in the 1920's, reached a point of reductio ad absurdum. With the present trend, however, such a suggestion will probably be greeted as anathema. Ironically perhaps the 'idea' of territory seems to have acquired those attributes which make it a property and to question it

may produce that behavioural repertoire reserved for other threatened territories. While Scheflen argued (1972) that 'we virtually denied the territorial .... behaviours of man until the late 1960's',one cannot help but wonder whether we are now in the phase of being blinded or at least perceptually blunted by finding these behaviours everywhere. Indeed the conclusion reached by Klopfer in 1968 still seems to hold good '....territorial behaviour is far from being a unitary phenomenon. It is a heterogeneous complex and to assume a single underlying motive, whether in terms of proximate, physiological or ultimate, evolutionary forces is to assume too much'. It may be postulated, though that this is now on the level of speculation, that the need to find territories everywhere may be related to their loss (both on a physical and psychological plane). If this can be proved empirically, then, Ardrey may have touched on a significant idea in deducing a deterritorializing of mankind.

3.ii. THE 'PERSONAL SPACE' CONCEPT

The concept of 'personal space' appears to have evolved from a fusion of the thoughts of those investigating person perception (e.g. Fisher & Cleveland, 1958) and attempts to apply the ecological term 'individual distance' (sometimes called 'personal distance' or 'social distance', although these terms are not always used synonymously) to the human situation (e.g. Sommer, 1959). In this section the evolution of the concept from this fusion and the transitions in its meaning will be traced. We will then discuss whether the existence of 'personal space' has been conclusively demonstrated.

Those dealing with the way a person perceived himself, that is, with his 'body image' or'body schema', postulated that an individual's sense of distinctness from his environment and the degree to which he employed

projective mechanisms in dealing with his external surroundings, was determined by the relative cognitive strength and cohesion of his'body schema'. Those individuals who experienced a clear sense of differentiation from the surrounding environment (i.e. had a strong 'body image boundary') would be open and direct when interacting with others (Fisher, 1963); those who experienced themselves as extending into the environment or, alternatively, penetrated or penetrable by the external surroundings and had a 'weak body-image boundary' would 'create exterior conditions, which....artificially provide a substitute boundary' (Fisher & Cleveland, 1958; this implied spatial distancing).

These hypotheses were of particular significance to the development of a 'personal space' concept as, first, they proposed an internal organizing variable which would habitually integrate spatial interpretation and responses ('a body schema is a silent organization, a

cognitive entity....which relates spatial....units of the behavioural field into an integrated structure', Scheerer, 1954). Secondly the thoughts of these researchers suggested a projected boundary which "claimed" as part of the individual's sense of self, an area external to himself. An important distinction however from subsequent reasoning was that in this case the projected boundary was not common to all individuals but was a particular defensive strategy employed by those whose experience of themselves was diffuse.

Actual body size perception and diffuseness were seen as related to environmental variables; a condition of 'open-extended environmental space' produced a relative expansion of the personal body perception and concomitantly a larger spatial "claim", whereas body distinctness (as opposed to diffuseness) was enhanced by a closely confined spatial context and body stimulation (e.g. physical contact), and resulted in a reduced spatial projection or removed it altogether

(Wapner, 1965). It was also suggested that an individual's sense of distinctness could be influenced by the level of perceptual stimulation, so that stimulus deprivation or over-stimulation would both tend to reduce an individual's sense of distinctness from the environment (i.e. would weaken the cognitive structure of the body image and therefore set in motion the establishment of external spatial boundaries). If, however, the sensory isolation had the effect of bringing the perceptual stimulation within the tolerance threshold of the individual, then his sense of distinctness (equated with a sense of personal identity) could be expected to improve (Reitman, 1962). This would result in a decreased need for external spatial adjustments. It was considered,further, that personal body perception was not usually affected by functional disturbances (e.g. schizophrenia), (Shontz, 1969); in other words, although a personality factor (low-barrier versus high-barrier individuals) was recognised, this was not correlated with

functional disturbances. This stands in conflict with the assumptions of Horowitz and his associates (1964, 1968), which will be discussed later.

The term 'individual distance' was attributed by Sommer (1967) to Burkhardt (1944) and was used by the latter to refer to intraspecific spacing. It had been observed that some species of birds appeared to keep a particular, relatively unchanging distance between themselves and others of their species[1]. This commonly shared awareness of a single appropriate distance was primarily observed in situations of flocking (e.g. migratory gatherings, breeding colonies) and appeared to serve both a protective and communicative function[2].

A similar but not quite identical term was employed by Hediger (1961) to describe the apparent cohesive force (attraction) which held together groups of animals

1. This was later refined to an arrival distance, a resting distance and a take-off distance.
2. It was both a defence against predation and enabled group members both to be part of and aware of the communal "mood".

within their territory. He specified that this metaphorical 'elastic rubber band which invisibly (connected) all members of a group' was only operational in groups of 'distance type animals'. He defined 'distance type animals' as those which 'except in contact with their young, do not tolerate any bodily contact with their kind....they meticulously keep a specific distance from each other'[1]. This qualification in the use of his terminology was of significance as this facet of his ideas has been incorporated into research into human spatial behaviour without consideration in the main of its implications. While application tends naturally to be analogous, this distinction of non-contact and contact species has been taken over and applied to cultures (Hall, 1966; Argyle, 1974). It has not, however, been asked whether then these particular spacing behaviours are only applicable to non-contact cultures. Nor is it clear what variables

1. This statement suggests in fact 'individual distance'.

determine 'social distance' and whether it is only one of a series of possible spatial responses (i.e. the 'social distance' concept stresses the group maintenance character of this response; it is still possible however that a minimal distance - something more akin to 'individual distance' - may also be operating on a continuum of 'no further than' = social distance to 'no nearer than' = individual distance).

Hediger did not suggest that social distance was maintained because of 'repulsive' factors i.e. that animals kept away from others of their group because of possible negative (aggressive) interactions. This step, however, was made by Hall (1966) who combined Hediger's observations on social distance with distancing as a function of dominance. He states 'personal distance is the term applied by Hediger to the normal spacing that non-contact animals maintain between themselves and their fellows...dominant animals tend to have larger personal distances than those which

occupy lower positions in the social hierarchy'. The use of the adjective 'personal' was extremely important as it made the conceptual transition from an inter-actional or reciprocal determinant of particular spatial responses, to a primarily individually determined response. While this was at times implied in the writings of Hediger, his fundamentally ecological orientation retained the distinctive interactional viewpoint. Hall implied in contrast that individual animals made a spatial "claim" and that the size of that claim was determined by their dominance (equated with level of aggression). This was very much the preparatory ground for theorizing about 'personal space' (i.e. as a person-centred distance rather than a group-related distance).

The actual use of the term 'personal space' appears to be attributable to Sommer (1959) in distinguishing between it and territory. He drew on the already available terms, qualified however by his own

conceptualization of their interrelationship. He stated that 'personal space' had a body at its centre and moved around with that body and had an invisible boundary. He suggested that entry by another into the personal space area (he spoke of 'intrusion') would produce a withdrawal response.

This was again a conceptual 'jump' (i.e. that the entry of another into the area around the individual constituted an intrusion). Sommer's statement was moreover, unqualified (i.e. did not relate response to dominance hierarchy or to reasons for entry) and implied that should an individual respond aggressively (defensively) to an intrusion, then the area involved must be his territory. What Sommer failed to do, however, was to indicate how the two spatial areas (territory and personal space) were interrelated i.e. what would occur if the personal space zone was entered when one was in one's territory. It had already been shown by the ethologists that territorial defence was

most intense at the centre of the territory and increasingly weak to the point where aggressive tension between two bordering creatures would be equal. The experimental observations on this type of behaviour did not include a 'personal space' dimension, since any encroachment produced defensive responses and therefore an additional concept was not necessary. In species where both responses appeared to be observed the 'personal space' response occurred in a neutral spatial environment (an area outside either a group or an individual spatial 'claim', as cited by Ardrey, 1967, for gulls). Such a response could then only occur in species where a neutral area existed, unless, as Hall suggested, the response occurred in an intragroup setting (i.e. in species where territory was shared). Deliberate 'intrusion' in the latter instance, however, could presumably be related either to sickness of the individual group member or to a challenge of dominance.

In attempting to apply these concepts to the human

situation a further simplification occurred. This was all the more problematic as the suggestive but in the main experimentally untested hypothesis of animal studies showed divergent spatial response relationships. Moreover, there were indications of possible variations in spatial response determined by age/development, season and the diurnal/nocturnal rhythm.

In the transition of these concepts to the human setting a phase of anecdotalism intervened which tended to mute the critical analysis of what was assumed. This is particularly characteristic of the writings of Hall (1959, 1966) who, although undoubtedly highly suggestive and possibly partly accurate in his observations, nevertheless hypothesized interactual distances which were on the whole treated by subsequent researchers as a fait accompli. In particular Hall's schema for appropriate conversational distance under various conditions of social and psychological closeness, which he asserted were culturally acquired and culture

specific, was taken over as an absolute, concrete reality (e.g. Patterson, 1968; Albert and Dabbs, 1970). Despite the apparent conviction of Hall about the circular zones around the individual, the theoretical underpinning of his representation was somewhat vague. In particular the distinction between interactionally (reciprocally) determined distances and personally decided (preferred) distances was only partially discussed by Hall with a certain blurring of concepts occurring, (i.e. was the intimate interactional space zone boundary equivalent to the personal space boundary or did the personal space boundary eventually disappear - to the point of equalling 0 cm - in intimate encounters, or was the personal space boundary an extending one according to the nature of the interaction). It is apparent that the various ways of treating human spatial response were as yet poorly integrated.

The study of Horowitz, Duff & Stratton (1964) was an example of an attempt to fuse the two divergent

strands of conceptionalizing about the relationships between the individual and his environment (i.e. the view point of the body perception researchers and the ethological perspective). It became pivotal for further research in the field. For this reason it is necessary to consider the study in some detail.

The bias of Horowitz was psychoanalytical, which meant that, while he acknowledged what he called the 'transactional quality' of the space between two individuals, he also saw that distance as affected by psychic factors which were predominantly unconscious. Thus, if he did not deny that actual non-verbal cues in the interpersonal encounter might partially determine the response, he anticipated the unconscious participation of the current ego state and motivational state of the individual (1964) in the assessment of and reaction to a situation. The means, however, for deciding the extent to which intrapsychic processes determined response was based on the premise that if those diagnosed as

psychiatrically disturbed manifested variations in spatial response from those considered to have achieved psychological maturity, then that variation was the 'measure' of an abnormal degree of intrapsychic involvement. (This is an exceedingly important point, for Horowitz did not specify whether the spatial response maintained by 'normal' adults represented the culturally required interactional distance or whether it was the degree of space needed to maintain mature intrapsychic equilibrium or whether the two could be equated.) The increased spatial demand of psychiatric patients was interpreted according to the psychoanalytical concept of defense mechanisms in that it was postulated that if an individual experienced an encounter with another person as threatening, either because of his fear of his own sexual and aggressive impulses or because of his projection of these on to the other person, then he might use space as a defensive strategy[1].

1. This did not in fact explain the decreased spatial responses of depressive patients which Horowitz recorded in his 1968 study.

Moreover the extent to which an individual adopted spatial distancing (rather than other cognitive manoeuvres) to deal with his intrapsychic impulses was taken as a measure of regression. The most extreme spatial responses, therefore, were considered to be indicative of the most regressed or most psychically disintegrated personalities[1].

Despite the problems of linking such theoretical considerations with a viable experimental design, Horowitz's understanding of spatial behaviours was not as simplistic as it might appear. In his 1968 paper he delineated the problems involved quite lucidly when he stated 'the personal and idiosyncratic determinants are in complex relationship with cultural patterns of spatial usage and group phenomenon'. However, Horowitz's thinking is, on the whole, rather diffuse and appeared to be an attempt to merge together Freudian concepts, social psychologocal insights and his own clinical

1. If this were correct spatial measures could be used as a measure of the degree of disturbance.

experience. Already in his 1963 paper he had postulated two 'systems' (more or less equivalent to response sets) which affected the spatial response, namely the territorial and the interpersonal. By the former he understood the impulse to intrude upon and take possession of, by the latter he appeared to mean the response to the social implications of the encounter situation. Following such a line of reasoning, however, one might ask whether the variations in spatial response demonstrated by Horowitz et. al.'s different experimental groups might not mean the differential utilization of those 'systems' or modes of reaction. There seems in fact to be a conceptual gap between Horowitz's 1963 paper and that published with his associates in the following year. In this latter paper the existence of personal space is stated as an irrefutable fact ('An area of personal space appears to surround every individual, which seems to be reproductible and may be regarded as an immediate body-

buffer-zone'). It was considered to be part of the body image, but in contrast to earlier writers it was universal rather than required only those who felt vulnerable in their sense of separate identity. One is almost left feeling indeed, by the 1964 paper, that Horowitz and his associates, having assumed the existence of a 'body-buffer-zone' (equated with personal space) for all individuals, were intrigued by the possible diagnostic implications of variations of it. (The subsequent study by Horowitz in 1968 would seem to substantiate this, as it attempted both to identify variations in spatial behaviour of those assigned to various diagnosed groups and to trace the alteration of spatial responses during various stages of psychiatric disturbance.) Their enthusiasm for its diagnostic potential, however, appeared to blunt their critical analysis of their findings.

The hypothesis that such a zone around the body actually existed rested solely on the fact (despite the

attempt to suggest ethological support) that, when approaching relative strangers in a fairly unusual situation, individuals stopped at a certain distance from them. Yet Horowitz (1964) took this as vindicating their concept, for they stated, 'measurements of personal space, the area immediately surrounding an individual, demonstrates its reality and its function as a body-buffer-zone in interpersonal transactions'. It might firstly be asked whether the request to walk up to another person actually was a transaction (particularly as the subject would also be transacting with the third person making the request). Secondly, while it was apparent from the distance maintained that the person being approached was not being treated as an object, as objects were approached more closely, the intervention of what was socially appropriate might be expected to predominate over what might be personally desired. This is, of course, where Horowtiz and his associates anticipated that those suffering from psychiatric

disorders would be unable to respond according to social or cultural requirements (their behaviour being assumed to be dominated by their intrapsychic conflicts). If this were the case, however, one would expect far greater response variation for the schizophrenic patients. In the face of a comparative uniformity of response one must accept that either Horowitz and his associates selected a group of patients who were, more or less, at the same level of regression or, as this seems unlikely, one must conclude that other variables were affecting the response variation. Moreover, since the variation from 'normal' adults was not very great, and since there was mention of other strategies for coping with unwanted interaction, such as reduction in eye-contact, one might conclude that these patients were already recovering following Horowitz's reasoning in his 1968 paper: 'Patients who manifest unusual spatial behaviour are usually in the throes of a regressive period. As they improve clinically they tend to use more advanced cognitive defenses and

relinquish motor defenses'). Of course the study of Horowitz and his associates was a fairly early attempt to demonstrate variations in spatial responses experimentally. Nevertheless, the weaknesses of the study cannot be ignored. While acknowledging the time consuming nature of the experiments, one may still ask why the person approached was not varied. The use, for example, of another patient, a hospital attendant, as well as a technician would have shown whether the 'comfortable distance' was related to such factors as familiarity of the other person, role requirements, group identification, habitual interaction patterns, etc. Further, if one may use Kleck et.al.'s (1968) study to indicate the kind of spatial distancing desired by healthy people between themselves and stigmatised individuals, then it is necessary to ascertain both whether the latter are aware of the spatial 'avoidance' behaviours of others towards them and whether they then 'respect' this. That this might be feasible may be

drawn from the findings of Tolor and Donnon (1969) and Tolor (1970)which suggest that even long-term hospitalized psychotic patients desire interaction with others. If, however, to achieve this they must maintain a greater distance between themselves and others, then the actual response may be an interaction between their need state and environmental conditioning. A further difficulty in Horowitz et. al.'s study was the failure to record the extent to which the psychiatric patients were on medication. This could be of significance as studies (e.g. Miller in ed. Krames, Alloway and Pliner, 1974) would suggest that variations in medication may produce quite significant changes in spatial responses as well as in the response of the environment to the medicated person. Indeed in this 1968 study, Horowitz did comment that the preponderance of depressive psychosis was due to selective admission for an unrelated drug study, which may explain the unusual responses of that particular experimental group,

and indicates the lack of attention paid to this possible variable.

While one might argue that it is easy to be wise in the light of subsequent research, it is important to pay detailed attention to the inadequacies of Horowitz and his associates' study, as the concept of 'body-buffer-zone'has been taken into the literature with virtually no questioning of its empirical foundation. The kind of merger too of divergent strands of conceptualizing has been used for theorizing in later studies.

In Horowitz's and his associates' defence it must be said that they concluded that their interpretation of their findings was still tentative and recommended the replication of their study. Their injunction was not followed. Instead their study has frequently been taken as evidence for the existence of personal space. Indeed, while modifications (in terms of identifying variables influencing spatial response) have been made to the basic concept, the actual existence of 'personal space' has never really been called in question. Some recognition,

however, has been accorded to the fact that it is a term used to cover a multiplicity of spatial behaviours. Leibman (1970), for example, stated: 'While there is an apparent consensus on the general meaning of personal space, it seems to have become a catchall term for a number of variables with different conceptional and operational definitions'.

At this point, it seems appropriate to discuss the variations in definition (and in terminology) and then to discuss the evidence for asserting the existence of a 'personal space'. With whichever particular definition one begins, one is confronted with the use of additional terms which, while intended to qualify the initial statement, tend in fact to produce a certain vagueness. However, having noted the problems, Sommer's definition (1959) will be taken as a starting point. He defined personal space as 'the portable bubble of space...(with) a body at its centre... sometimes seen as part of interpersonal distance'. This

appears to equate with what Lyman and Scott (1967) called 'body territories', which were defined as 'the space encompassed by the human body and the anatomical space of the body'. There was, however, divided opinion on the actual shape of this area around the body, for while Sommer (1969) asserted that 'personal space is not necessarily spherical in shape nor does it extend equally in all directions...' and that 'people are able to tolerate closer presences of a stranger at their sides than directly in front', McBride (1968) differentiated between 'personal fields' (or 'social forcefields'), which would be the equivalent of Sommer's 'personal space', and what he called 'personal spheres'. He stated: 'These fields do not have an equal radius in each direction as do the personal spheres' and that they were 'greater directly in front of the face' (the concept of a sphere seems to come from Hall's work, he spoke of a 'free sphere'). Although Lyman and Scott (1967) did not specify the shape of body space[1] they appeared to

1. Lyman and Scott suggested that under certain conditions body space could be maintained only as a psychological entity, as 'inner space'.

ascribe a different function to it from Sommer.

While Sommer had intimated that 'personal space' was an interaction-related dimension ('part of interpersonal distance'), Lyman and Scott suggested that 'bodyspace' or 'body territory' served as a 'space for people to maintain identity and indulge in various idiosyncratic behaviours'. These distinctions are of importance as they imply that different response schemata may be operative depending on the assessment of the situation. It follows from this, for example, that inappropriate interactional distances may produce different reactions from what it interpreted as deliberate 'violations' of one's identity. Sommer indeed, in 1969 appeared to subscribe to a similar distinction (with, however, some change in his original definition), when he acknowledged that spatial responses may be determined both by cultural prescription and by personal identity-maintenance behaviours. In his modified statement, Sommer said '..The violation of individual distance is the violation of society's expectations, the invasion of personal space is an intrusion into a person's self-boundaries'.

Unless, however, it can be established that there is differential response to closeness, which may be difficult to demonstrate experimentally, as sudden or unusual physical proximity may be experienced both a socially inappropriate as well as personally threatening, one has no way of knowing whether the distinctions are valid. The difficulties are further compounded by the fact that both Lyman and Scott and Sommer present theoretical structures which lack empirical verification. This is not to deny that Sommer engaged in experimental work but his experiments tended to be of the hypothetico-deductive type, in that he assumed, for example, that by 'staging' an intrusion and gaining a response he was proving the existence of personal space.

The distinction suggested by Lyman and Scott and found in Sommer's later work was not, however, followed by many other researchers and overall the balance tended to remain in the direction of treating personal space as related to interpersonal relationships. Kleck et. al.

(1968), for example, did not differentiate between terms and spoke of '....personal space or individual distance, which persons characteristically employ in inter-personal interactions...' and Leibman (1970) summarizing the situation in the field concluded that 'in general, personal space is conceived as an expanding and contracting ring or bubble surrounding the individual which defines the physical separation he requires in relation to others with respect to specific activities and defined relationships'.[1] The relationship between socially permitted behaviour, as a learned set of schemata appropriate to specific situations and the satisfaction of interpersonal goals[2] remained however in need of clarification. The dilemma hinged on the expectation that socially learned behaviours would represent a relatively static response pattern, changes

1. Leibman did, however, acknoweldge that personal space could be conceptualized as a specific form of territory.
2. Leibman cited formality, intimacy and privacy as examples of interpersonal goals.

in these being dependent on a cognitive reassessment of the situation, whereas personalized responses (according to the individual's needs and goals) would not necessarily be in agreement or alignment with them. However, unless one could establish the socially expected spatial response for identified situations one had no way of determining whether a person was responding according to it or according to his personal needs. It followed from this, of course, that asking a person to stop at a comfortable distance was no assurance that he was responding according to individual needs or goals, as the anticipation of social disapproval through violating a social norm might also be considered uncomfortable. Furthermore, variations in response, even when the social space norm had been established, might be explained either in terms of a different assessment of what was socially appropriate, or by variation in the social norms learned (as suggested by Mallenby's 1974 study) or by the involvement of individualized space demands (which might be either less

than or in excess of the distance which was generally considered to be socially appropriate).

It is apparent that 'personal space' at this point becomes a fairly loose concept and its usefulness considerably reduced. The effects of various types of interaction (e.g. stressful, hostile, affirmative) on spatial responses will be considered in the section on interpersonal determinants as these are considered to be predominantly reciprocal and function in relationship with other modes of non-verbal expression. It remains, however, to consider the evidence for assuming the existence of an omnipresent, 'fairly impermeable' (Knowles, 1973) personal space[1].

There appear to have been two main lines of evidence for supporting the 'personal space' concept. The first of these rests on the fact that when individuals are asked to approach another person they do not go right up to them. The difficulties involved in this method

1. Knowles extended the concept and asserted that groups also make 'personal space' claims.

have already been discussed. The other line of evidence rests on responses to what has been called 'intrusion' into the 'personal space' area. Such an intrusion is considered to produce a variety of flight reactions (the research into this area stems in the main from Sommer and his associates). The whole concept of intrusion, however, needs careful examination, as what is usually described as intrusion is often a series of rather bizarre behaviours carried out by experimenters and their assistants[1].

The universal character of personal space has been called in question by the knowledge (unfortunately lacking supporting study) that certain cultural groups not only maintain very little distance in personal interactions but require tactile involvement, as well as paralinguistic support such as continual and repeated 'mm' sounds, to service the interpersonal encounter. To

1. A classical example of this is the key-jangling of the 'invader'in the psychiatric clinic setting.

achieve this, a so-called spatial 'intrusion' must occur. While it has been argued that such cultural groups represent 'contact cultures', and that for 'non-contact cultures' such an experience would be aversive and evoke withdrawal responses, this is disputed here. Not only was it the author's personal experience with East African tribes, such as the Samburu and Buganda, that close proximity need not be threatening[1], provided it is accompanied by other non-verbal cues denoting affiliative intention (smiling, head-nodding, relaxed posture - a type of swaying, etc.), but there would appear to be other studies which support this. Kleinfeld (1974) found that close body distance and touch applied in a deliberate but cautious manner with other affiliative ones, appeared to reduce anxiety and improve the academic performance of Eskimo students (although arousing prejudice and hostility from white students). Although one might suggest the response of the white

1. The author's experience could be rejected as an atypical reaction as a result of heterogeneous cultural experiences.

students was expressive of their rejection of close spatial proximity, this may be questioned when compared with the findings of Howard and Friedman (1970), for white students. They found that if an experimenter combined touching 'in a minimal, socially appropriate way' with self-disclosure, then the subject would respond with self-disclosures (i.e. would respond trustingly and without various withdrawal and self-concealing manoeuvres; they suggested that because of status discrepancies the students would not in any case remove themselves physically). It was particularly significant in this later study, moreover, that touching without other cues did not lead to openness in the interaction; this would seem to suggest that a judgement of the nature of the interaction which is about to take place is made by assessing a variety of non-verbal indicators. If then by intrusion is meant the emittance of either ambiguous or hostile non-verbal cues, an avoidance in the form of moving away, or if social expectations prevent it, of showing discomfort or

'freezing'[1] may be expected. This, however, does not seem on its own to justify a concept of personal space, particularly as flight responses can be produced by staring at another person from some considerable distance (Ellsworth et.al., 1972). It is suggested here that well-articulated interactions, that is, those which are monitored with clarifying and reassuring non-verbal interchanges, will not produce withdrawal responses. If however, the approach breaches social etiquette or personal expectation, then a response to redefine the situation for the offending individual (requiring them then to make the withdrawal) or retreat by the person 'offended against may occur.

It must, however, be acknowledged that Sommer (1969) did in fact recognise that 'personal space' might disappear under certain conditions, although he maintained at the same time that it was 'an area with invisible boundaries surrounding a person's body into

1. A reduction in all interactional signals.

which intruders may not come' (he was followed in this assertion by Evans and Havard, 1973, and somewhat more tentatively by Barash, 1973). He intimated firstly that personal space might be a 'culturally acquired daylight pehnomenon', implying of course, that darkness might lead to its removal[1]. More importantly, however, Sommer recognised that 'personal space' as a spatial claim behaviour might 'disappear under certain conditions' such as crowding; Barash (1973) took a similar position when he commented that '....under conditions of moderate crowding the expectation of personal space is apparently reduced', although with the difference that he suggested there might be a transition from accepting a somewhat smaller area separating oneself from other people to the point of actually giving up an external claim. While it is generally accepted that the psychological behaviour of

1. In 'Personal space; the behavioural basis of design' (1969) Sommer suggested that an increased number of individuals could be encouraged to use an area by reducing the light intensity because 'low illumination' created 'greater intimacy'.

a crowd tends to react as a separate Gestalt[1], the tolerance or acceptance of the close physical proximity of others in situations of overcrowding is still a virtually unexplored area.

It has been suggested that one means of coping with the high degree of unwanted physical intimacy experienced in a crowding situation is to utilize a psychological manoeuvre and treat the other people as 'non-persons'. While this is of course based on observations of crowd behaviour in the natural environment and has not been subjected to experimental investigation, the utilization of alternative non-verbal distancing cues to substitute for the loss of space seems quite plausible. If however, it is possible to do away with actual physical space, providing other non-verbal responses carry the right 'message', it must be asked whether this can not also happen in other situations. It would be possible for example, to fulfil

1. The individual personalities are temporarily obliterated by the group impulses.

socially required spatial norms and yet to change the actual meaning of the distancing by altering other non-verbal cues in the interaction (e.g. increasing the eye-contact would elevate the intimacy of the encounter, reduction of eye-contact would decrease it, etc.).

It becomes apparent that to substantiate the validity of any spatial behaviour in isolation is an exceedingly difficult task. While there is no doubt that the idea of 'personal space' has been taken into the general body of conceptualizing in social psychology, the author of this study would support the contention of Sheskin (1971, cited by Evans and Howard, 1973) 'that at present it would be premature to conceptualize personal space as a unitary concept...'. To date at worst 'personal space' has become a band-wagon concept which some researchers seem to have joined without questioning the premises or examining the research on which the term is based. At best a few studies (notably that by Leibman, 1970) have tried to vindicate themselves

from the discrepancies within the field by more detailed and cautious delineation of what they understand to be personal space. If, however, one wishes to examine spatial responses in isolation from other non-verbal behaviours, then it must surely be necessary to consider attitudes to space, and previous spatial experiences (such as crowding or isolation) as well as actual spatial responses. Then, and probably only then, it may be possible to develop a more precise terminology and relate meaningfully people's ideas about their spatial needs with socially required spatial behaviours. While the personal space concept is undoubtedly attractive, particularly because of its comparison with ethological terms (and we have perhaps reached a stage of rather treasuring our unity with other species), it appears in the light of the evidence gathered here something of a will-o'-the-wisp.

3.iii. SPATIAL BEHAVIOURS FROM AN INTERACTIONAL PERSPECTIVE

A spatially significant dimension to social interactions was postulated fairly early in the development of social psychology. Bogardus (1925), in his now classical study investigating 'social distance'[1] hypothesised an interrelationship between attitudes to various racial groups and actual desired or tolerated degrees of socio-spatial proximity. By this he implied that space, as the interval between individuals or groups, was intimately related to the meaning of that space, so that actual spatial proximity might be tolerated for some individuals, provided that that physical nearness could not be interpreted as an indicator of level of relationship or intimacy, e.g. a person might be tolerated as a "worker" but not as a 'friend'. This of course meant that actual distance could not be

1. This use of the term was not related to that of the ethologists.

assumed to be directly expressive of the emotions evoked.

Implicit in his investigation of prejudice were two dimensions which were to become extremely significant to later research in the area; firstly, he suggested that spatial and social nearness was determined by affiliative inclination or need. This need expressed itself across a continuum of responses from desiring or at least being willing to have an individual both emotionally and physically close, to desiring a member of a particular group to be kept as distant as possible. Secondly, he indicated that role prescription might also significantly influence response expectations and response proper[1]. For the individual this was presumably an interaction between socially and culturally decided parameters of approved behaviour for specific social functions and stereotypes about particular races

1. By this he meant that proximity might be tied to the social roles permitted to be performed by specific groups of individuals.

which affected the degree of nearness that would be tolerated from them. From a society's point of view this could be regarded as the balance between the need for additional members to perform selected jobs or roles and the level of projection of negative attributes into an outsider group required to maintain internal cohesion. Bogardus's approach required verbal report from which conclusions were drawn about desired nearness. It did not relate these conclusions to the measurement of actual social interaction distances with different groups. It did, however, suggest that a heightened level of arousal might occur in situations which involved coping with an individual at a closer distance than one desired.

Moreno (1946) was probably the first to postulate a direct relationship between physical distance and an individual's feelings about other group members. Although his sociometric approach was developed methodologically as a reporting about feelings, he

believed that this would correlate directly with a spatial enactment of the same feelings[1]. He consequently had individuals actually spatially demonstrating what he named the 'tele-process' which was their feelings about interpersonal affinities projected into three-dimensional space[2]. In his 1953 work he further expanded his thinking on a spatial proximity hypothesis when he stated:

> "the sequence of 'proximity' in space establishes a precise order of social bonds and acceptance, the sequence of giving love and affection is thus strictly preordained and prearranged to a 'spatial imperative'".

Moreno believed he had demonstrated a real relationship between spontaneous emotional response[3] and spatial usage. He did not,however, discuss on what basis these

1. Moreno stressed the uniqueness of the response at any particular point in time so that the empirical verification of his postulate would not be possible.
2. He postulated a correlation between a psychological structure of interpersonal relations and actual interaction distances.
3. He implied that positive or negative feelings about people, if spontaneous, would somehow be distinct from social role attributes, socially expected emotional responses and projections.

choices were made; that is, what variables determined the spontaneous response, how these changed over time or how actual interactional experiences would affect them.

Related to Moreno's perception of the structure of social interactions was Lewin's (1952) field theory (which in its turn is related to general system theory). What Lewin created was essentially a structural theory of the intrapsychic processes which determined behavioural responses. Thus space was for him first and foremost a psychological entity, as an inner space, which was subject to cognitive structuring. He referred to this space as the 'life space', but in his theorizing, the intrapsychic interactions (tensions and subsequent attempts to reach a state of equilibrium) clearly had an external spatial dimension. This external space was delineated according to the inner cognitive awareness of where the individual was permitted to go or to be[1] and

1. These were determined both by social norms and the spatial claims/rights of other individuals.

was a changing experience related to his intrapsychic needs and his socially prescribed role (i.e. as a child, adolescent, adult, etc.). What was particularly significant about Lewin's approach was that his conceptualizing of an internal organiser of interactions occurring in space was dynamic and implied a continual adjustment over time. While he accepted the influence of social norms[1], he did not anticipate a response 'set' (as a habitual response), as he stated that each behavioural response was a unique reaction to the composite existential experience at that moment in time. He did admit, however, that if a high value was placed by society on a particular behavioural response the freedom of the individual to act in a different way would be constricted.

Lewin's theory was extremely comprehensive and highly suggestive but difficult to investigate empirically[2].

1. He presumably accepted too their internalization as a portion of the total cognitive structure.
2. It could be investigated experimentally if one used a simpler model of the process of assessment and interpretation of a situation and the response, e.g. the intimacy concept, Argyle and Dean (1968).

The problem raised of the relative influence of individual needs and societal norms has indeed not yet been resolved. In fact it remains one of the fundamental dilemmas in the field, as we cannot yet determine what responses are those which are expected socially and which are the product of personal affiliative, dominance and other needs, which have not been satisfied. This is of course further complicated as even the socially prescribed response may be different for different individuals because of differing social roles (as determined by sex, profession, social class, etc.). Moreover, as most individuals are required at different times to fulfil a variety of roles, this will mean that their behaviour will further be determined by their assessment of which of these roles is appropriate in a given situation. From this it follows that an individual's freedom to respond according to his actual needs may be decided by the situational 'frame'.

The problems raised by these early studies were

essentially of a theoretical nature and intricately embedded in sociological role theory, attitude research and theories of creativity (as the capacity to act out ideal roles or to enact original roles). It is hardly surprising then that some of those who wished to investigate interactional distances experimentally tended to disregard the difficulties uncovered by these first attempts to understand the relationship between overt spatial response and the psychological state of the individual. Instead the more simplistic model provided by Hall (1966) of the typical normal interaction distances for intimate, casual personal, social consultative and public encounters was adopted, despite its lack of substantial empirical verification. Hall's model was based on the fundamental assumption that individuals of a given culture share an understanding both of spatial appropriateness for specific interactions and of the meaning of spatial distances. It also implied a direct correlation between level of arousal (i.e. the emotional content of the interaction) and actual

distance and suggested that the degree of the arousal in specific situations would be a culturally shared one[1]. This meant that while Hall appeared to be talking about social norms for spatial responses, he intricated personality factors which are normally considered to be the expression of personal characteristics rather than cultural ones. Hall was in fact suggesting that personality might be a culturally defined construct.

Not all social psychologists, however, utilized Hall's approach and so, while there was a common sharing of the awareness that man might put meaning into interactional distances, some researchers discovered spatial variables operating in experimental situations more by accident than as a result of planned deliberation. These discoveries were nevertheless of importance as they provided more slants on the utilization of space, although they did not clarify how personally motivated spatial responses were affected by or integrated with

1. This meant, for example, that while intimacy would only be experienced by Arabs at a very close distance, Northern Europeans would experience the same emotional content even when spatially further removed.

social spatial norms. Those investigating group behaviours observed that both position in space (in relation to other people) and spatial adjustments in the course of group interactions (such as the changing of seating position) predicted the degree of participation and the verbal dominance of individual members (Steinzor, 1950; Hare and Bales, 1963: '...both centrality of seating position and distance between members can be used to predict the interaction pattern'). This led on to definite attempts to establish the spatial dimensions of such group dynamic concepts as affiliation and dominance. This could be done either by asking subjects to achieve a certain interpersonal end, and recording their space usage or by subjecting them to certain stimuli, which were expected to evoke specific feelings such as anger, anxiety, etc., and noting their response. Rosenfeld (1965) pursued the former method and asked subjects to try and induce approval or avoid it. He was able to demonstrate from this that subjects seeking

approval approached the other person more closely than those who were avoiding approval. While, however, this and other studies led to the general consensus that friendliness is conveyed by small interpersonal distances, the study by Meisels and Dosey (1971) suggested that this might not necessarily be the case. In their study, the latter method indicated above was applied in that they created an experimental condition which was expected to provoke anger. They found, however, in recording actual spatial responses that 'under certain conditions angry subjects assume small interpersonal distances'. The difficulty occurred in interpreting this response particularly as verbal reports on attitude (how the subject felt about the experiment) do not necessarily correlate with overt spatial behaviour. Meisels and Dosey concluded that the subjects who reacted with reduced distancing were actually expressing hostility by 'invading' the other person's space, thereby 'getting their own back' on them. This might be the correct interpretation but there

are alternative explanations. One could for example, still regard the reduced space as an attempt to seek approval after the initial rejection, or as a compensatory mechanism resulting from the guilt experienced at feeling angry. The actual interpretation put forward by Meisels and Dosey rested solely on the assumption that, once offended, the subject would remain angry and would show that anger spatially in one form or another (i.e. either by increasing the distance or invading). It did not allow for more complex psychological adjustments nor were measures utilized to register more sophisticated feelings about the experimental situation. Another example of the difficulty of applying the general paradigm, that affiliative feelings lead to small interpersonal distances, is when applied to the observation made by Horowitz (1968) that depressed subjects exhibit smaller interactional distances than controls. This could be interpreted then as indicative of dependency feelings and of wanting comfort, or it could be seen as a guarded but overt

expression of underlying aggressive impulses. This leads to the unavoidable conclusion that it is doubtful whether an interpretation of interpersonal behaviour can be reached exclusively in terms of spatial response. This is not, however, to underrate the importance of interactional spacing. One means of controlling interpretations is to extend the range of behaviours being observed, as it has been found that other non-verbal responses (body tension/relaxation; head-nodding; lean, etc.) provide additional clues for assessing the actual, as opposed to the purported, affective content and arousal level of the interaction (studies carried out by Mehrabian and his associates). In this way it has proved possible for example to distinguish between affiliative behaviour and ingratiating behaviour (the latter being betrayed by non-verbal indications of anxiety and tension), although both utilize the same spatial distancing.

An alternative approach which evolved out of the awareness of the influence of affective states on non-

verbal behaviours was to try to establish whether personality factors[1] could be related to interpersonal spacing tendencies. Such an approach undoubtedly arose as the result of the availability of diagnostic tests for demonstrating the presence of personality attributes, and possibly too from the influence of that strand of non-verbal research which anticipated a direct relationship between effect and expression (mainly the work carried out or inspired by Ekman and Friesen).

It is important, however, to recognise that 'personality' is itself a psychological construct the reality of which rests on the various diagnostic measures employed. What is normally understood by personality factors are relatively unchanging personal determinants affecting spatial response such as intraversion or extraversion (e.g. Leipold, 1963). Several problems arise from the use of such abstractions.

1. By this is meant stable attitudes and the resultant behavioural characteristics of individuals.

Firstly it has been suggested by Tolor and Donnon (1969) that personality factors (in their study, affiliative inclinations) may not necessarily correlate with overt behaviour. This of course highlights the whole question of the nature of personality, for it could be argued that need states such as affiliation or dominance are related to personality factors but do not constitute personality. Secondly, personality concepts rest on the validity of the diagnostic tests used, few of which are repeated, so that temporal variations in personal qualities or attributes as a result of changing social experiences are rarely identified. This is because personality measures usually rest on the assumption that they are recording permanent determinants and not temporary ones which may alter over time. Thirdly, recent research tends to suggest that introversive or extraversive tendencies may as much be a result of experiences of one's acceptability to ones peers during development, particularly in adolescence, as an inborn characteristic.

Thus physically variant individuals may experience themselves as socially unacceptable and as a consequence both of their fragile self-image and their limited access to their peer group may tend to demonstrate a more inward-turning interpersonal reaction. If this is so, then willingness to interact and spatial distances chosen may be the result of experiences in inter-personal settings ,with the possibility that more positive experiences might lead to spatial adaptations. This is not to deny that some individuals may be more easily aroused or may experience themselves as more vulnerable (as a result of their degree of sensitivity) than others but is merely underlining that what a person becomes may be to some, even to a large, extent externally determined. This means of course that understanding of spatial behaviours requires some knowledge of the subject's general interpersonal situation (number of friends, sense of isolation, level of popularity, etc.)

A further difficulty arising from a 'personality' approach to interpersonal spacing was the failure on the

whole to determine the relationship between individual spatial tendencies and social spacing norms. Kuethe (1964) had indicated one dimension of the problem when he had suggested that the demonstration of inappropriate spatial responses might be attributable either to 'idiosyncratic social schemata or to the absence of social schemata'. While he described the former group, however, as antisocial or socially atypical, that is their social aberrance rested on the acceptance of alternative social schemata, he classed the latter group as asocial and related their behaviour to a fundamental personality deficit, namely sociopathy. The concept of sociopathy is itself a rather imprecise one but undoubtedly what Kuethe was expressing was the conviction that social exposure to appropriate interactional behaviours would not necessarily lead to an acquisition of those responses. He suggested too that some individuals might develop the social schemata but they might be 'difficult to arouse'. It has been pointed out by Meisels and Dosey (1969) that there

appears to be divergence of opinion on the nature of social schemata, in that 'according to Little ....personal space schemata are assumed to exist a priori in structured form and the schemata are considered to be isomorphic with the patterning of actual interpersonal interaction distances', whereas, 'for Kuethe, the schemata seemingly are not assumed to exist a priori and they apparently may or may not be isomorphic with the actual interpersonal interaction distances'. It appears, however, from Kuethe's 1964 paper that a potential for the acquisition of social schemata[1] may in his opinion be absent for certain individuals, whereas for others the learning process is impeded (they may be acquired but 'difficult to arouse'). From this one might deduce that for the former group of individuals, their spatial responses would be exclusively governed by affective impulses, whereas for the latter, there would be a weak interaction between internal drives

1. Whether this equates with a structure may be disputed.

and social expectations. This, however, leads on to asking what the normal interaction is between the social parameters for specific situations, the actual affective content of the encounter and the emotional state of the individual. It may be postulated that the weighting given to affective cues in an interpersonal setting will depend both on the level of arousal (the emotional intensity, sensitivity and receptivity) of the individual and the degree to which the social set permits an affective content to the interaction. This is to suggest that part of the function of a social schemata (defined by Kuethe, 1962(a), as intended 'to structure ambiguous situations involving human objects') is to define both the way in which and extent to which affective content may be expressed. It follows of course from this that social schemata may at times be intended as much to curb or conceal the expression of emotion as to reveal it[1]. Resulting from this is the fact that compliance to social spacing norms may either

1. The lack of schemata by sociopathic individuals would then lead to the impulsivity and unpredictability of emotional response which has been attributed to them.

belie actual feelings (although these may, as already indicated, be revealed in other non-verbal responses) or may be congruent with them. This however, may lead to difficulties in interpretation, for while the feeling communicated may be readily comprehended if there is a unified response discord among the various non-verbal channels may cause uncertainty or may be understood as ambivalence (if there is a mixture of positively and negatively toned non-verbal behaviours). The response of the other participant in the interaction in this latter situation might lead the initial communicator to clarify the affective content in the consequent response (either by intensifying or minimising the cues which reveal it). This could include the abandonment of the social schemata if the emotional expression is allowed to predominate.

Despite evidence from studies which suggest either a direct correlation between affective response and overt spatial behaviour (Mehrabian and Ksionzky, in ed. Speer, 1972) or the preponderance in the overt

response of the affective assessment of the situation, the variables which determine whether this will occur have not really been isolated. This means on the one hand that the demonstration of the presence of specific social schemata will not necessarily guarantee that they will govern the overt response (Leibman, 1970: '...the mere presence of certain norms in an individual's repertoire would not seem to guarantee that he will behave according to their dictates'.) It also means on the other hand that the identification of the emotional components, attitudes and inclinations in relation to other people will also not necessarily be converted into actual spatial behaviour (Tolor and Donnon, 1969: '...the wish to form close or distant relationships with others.....is not necessarily related to overt behaviour'). This is further complicated by the possibility that interpersonal response schemata might be involved on a cognitive level with other constructs. This might mean that even if the correct emotional

expression level for a particular social schema could be isolated, its absence in terms of overt behaviours might be compensated for by covert procedures which could not be experimentally demonstrated (although subjects might be able to report on them).

One such construct which has been suggested, although without supporting and clarifying definition, is that of psychological space. It seems to have been used in a variety of contexts, at times implying a private or inner space into which the individual may withdraw, at others appearing to be rather the individual's personal experience of space. In the latter sense, indeed, it does not seem to be clearly differentiated from the postulated cognitive framework of schemata, for the individual's structuring, comprehension and utilization of space seem interwoven with these response sets. The idea, however, that an individual does have a mental image of space, which, though clearly related to environmental space, does nevertheless, once formed, have

an independence as an abstract thought[1], provides the theoretical basis for the translation of actual spatial distances into substitute manoeuvres in situations where the implementation of distancing is impeded (e.g. crowding) or socially or personally undesirable.

So far we have tended to view interpersonal spacing predominantly as determined by the individual, although the possibility that the interactant might also affect the response has been intimated.

There has indeed been a tendency to disregard the interactional nature of interpersonal encounters, so that experiments have been conducted which try to hold the behaviour of one participant stable and then register the variation in response of subjects to that person. If, however, as postulated by Goffman (1969) an interaction by definition involves an exchange of verbal and/or non-verbal ones, the real interpersonal dimension of these recorded responses may

1. It contains on an imaginative level the possibility of other spatial dimensions.

be questioned. Of course, it may be argued that the experimental assistant has usually been trained in the general response impression he is to convey (friendly, hostile, etc. this may also include specifications on non-verbal responses, amount of eye-contact, postural tensions, etc.) so that, as the subject is uncertain what to expect, the assistant is initially the one who biases the subject's assessment of the situation. However, if the initial spatial response of the subject is meant to equate with his affective state, then the influence of anxiety on the results cannot be discounted. Moreover, if Goffman is right in stressing the reciprocally determined nature of an interaction ('...together the participants contribute to a single over-all definition of the situation') either the experimental meeting is really a non-event or alternatively one may suspect that the experimental assistant will respond differentially to the various subjects according to the cues that are emitted by them

(despite instructions to the contrary). It is from this perspective that researchers interested in the use of non-verbal cues (including spatial ones) in an interpersonal setting have investigated composite dyadic response patterns. This leads on to another aspect of interpersonal relationships. They are, as has been noted and demonstrated by Pedersen and Shears (1973), subject to alterations over time. These changes within the relationship are registered in modifications in spatial behaviours, for as Pederson and Shears pointed out '...The interactional space process rests on time-linked changes which require action to hold it in a seemingly steady state'.

While the postulation of a reciprocal modification of spatial behaviours does not necessarily invalidate the general conclusions reached about the overall meaning of particular distances, it does underline some of the difficulties of interpreting from the behaviour of one partner in an interaction. This is one of the weaknesses

of those studies which ask a person to approach another and then attribute that spatial distance to the person approaching and name it their 'personal space' requirement.

If the divergency and complexity of results obtained from various experimental studies have tended to hinge on the interaction between social norms and individual emotions and needs, the relationship between these two groups of intervening 'forces' or concepts is a fairly tangled one. If, for example, one examines the results obtained by Kleck et. al.(1968) of the spatial responses of the so-called 'normal' individuals to stigmatised ones (such as those reportedly suffering from epilepsy) the interplay between the social and personal assessment of the situation becomes apparent. The ideas about mental illness[1] are by and large communally shared ones. That this is so, is supported

1. These have been eloquently pointed out by Szasz in a number of his books.

both by the variation of response to mental disturbance in different cultures and the transitions in the ideas pertaining to psychiatric problems and consequently in their treatment over time within one cultural tradition. However, the social concepts and such allied ideas as 'contagion' or 'contamination' or of the 'dangerousness' of mentally disordered individuals are given weight by the anxiety they evoke in the individual and frequently by an associated projection (in the psychoanalytical use of the term) of repressed emotions, such as aggression on to the labelled individual.(This being the case, one would expect a differentiated response in terms of the actual spatial distancing from stigmatised individuals depending on the level of emotional 'enactment' of the social idea of keeping such individuals isolated from the community as a whole.) Following this line of reasoning further, the observations of Kinzel (1969) that violent prisoners exhibit a larger spatial demand behaviour than other individuals may again represent a response which is the

result of the fusion of the societal censor (violent individuals should be isolated in prisons) and the individual's own anxiety about his dangerousness (i.e. the reasoning that he may hurt others and therefore must keep away from them or where a paranoid mechanism has been set in motion, the fear that others may hurt him). It is suggested that these two analyses of the situation blend together and are undoubtedly reinforced by the debilitating effects of social isolation (Lucas 1976). We shall discuss the impact of voluntary and involuntary social isolation on spatial behaviours in more detail later in this section.

The earlier studies in the field tended to concentrate fairly exclusively on the interpersonal factors affecting an encounter to the neglect of environmental determinants. More recently, however, particularly as a result of the work of Sommer and his associates, there has been a growing sensitivity to the impact of the environmental setting on human interactions. There seems now to be little doubt that the spatial response in an interpersonal

setting and the spatial structuring of the environment are intimately related. On the one hand the environmental spatial configuration can reinforce the definition of the encounter along such dimensions as dominance (status) and intimacy, by placing one of the individuals in a spatially disadvantaged position or by determining the distance it is possible to stand in relation to the other person. On the other hand, a person can select an environmental position which underlines his feelings about the interpersonal interaction (e.g. by sitting at the head of the table, De Long, 1970; by keeping a desk between himself and the other person etc.). This latter point is worthy of further consideration. An individual's capacity to exercise spatial selection may be affected by the status discrepancy between himself and the person with whom he is anticipating an encounter as suggested by Sommer (1969) and by Hutte and Cohen (quoted by Sommer 1969), by the nature of previous interactions (Leipold, 1963), and by the anticipation of continuing use of the space in

question (Edney, 1972). Clearly however, these latter factors are also affected by who is first to enter the setting in which the meeting is to occur (i.e. who has the primacy of selection), for that person can choose a place in it which most closely meets his emotional needs (in terms of his level of anxiety). Nevertheless it is suggested that an unconducive environment may only be altered to a limited degree. While most individuals appear to feel free to move chairs a short distance, it has been suggested that people tend to leave semi-fixed objects where they are. Consequently interpersonal interactions may be affected by extraneous and at times incongruent environmental cues, which belie the interpersonal definition of the situation as communicated by the interacting individuals, and it is possible that the environmental 'set'may at times lead to a redefinition of the nature of the interaction.

So far we have concentrated on interpersonal spacing from the angle of interactions in dyadic or small group situations. It is possible, however, that these

responses may be influenced by the total interpersonal context. More specifically it seems possible that the interpersonal distance a person selects in a particular situation may be affected by the interplay between the level of population density to which that person is accustomed and the number of people in the environment in which the interaction is taking place. This is not to deny that a set of social schemata may be culturally shared, but is rather postulating a further variable which may lead to variations in spacing. There have been several studies which have suggested indirectly that this might be so. Observations of both group interactions and of crowd behaviour have noted that spatial adjustments occur as the density of people using a particular area increases (Hutt and Vaizey 1966; Sommer 1969). Other studies have possibly failed to show whether such an effect exists or not because they have not measured interactional distances in empty versus crowded spatial conditions. The general tendency, of course, has been to believe that social schemata for

interpersonal situations operate despite such environmental variations as population density. However, the comment by Fast that all individuals living in crowded urban areas tend to stand approximately one foot apart, if empirically verified, may indicate that this is not so.

It must also be recognised that an individual can to a large extent predetermine the types of interaction with which he will have to deal by his selection of the environmental setting. Thus, providing the chosen setting does not alter unpredictably, the individual can function at a level of arousal which he has anticipated (Mehrabian and Russell, 1973). This being so, it seems probable that the selected or preferred interactional situation, with its characteristic distances, will represent a balance between meeting the intraphysic needs of the individual and achieving the maximally reinforcing social role. We do not yet know, however, how habituation to specific types of spatial distancing (as a result of living in a sparcely or densely populated area) may condition the

individual and affect the choice he makes. It is possible, for example, that continual exposure to one type of spatial situation or another may restrict the type of spatial choices an individual can make.

Another aspect of the interrelationship between the preferred interactional setting and the environmental situation is the extent to which an individual has been able to choose the situation. It seems likely that the physiological conjuncts of involuntary confinement or isolation which are to some extent known, or of overcrowding, may be quite distinctive from the same experiences if voluntary. In the first place the voluntary submission to potentially stressful situations will presumably involve some kind of prior psychological adjustment or at the very least the retaining of the feeling of being in control of the situation to the extent of having chosen it. Thus, while it may be postulated that the voluntarily isolated or confined subject may still experience some of the same feelings as the involuntary one, as a result of the loss of

contact with a social milieu and the perceptual deprivation (Altman and Haythorn, 1967), he nevertheless knows in most situations that he can end the experience whenever he wishes. From this it may be deduced that the level of arousal experienced will be heightened to the point at which it represents an alarm state the less control the individual has over the situation. The kind of relationship which is thought to exist is shown in Diagram 3. It is considered that this may hold good for situations of isolation or overcrowding (although the symptomatology resulting from the stress may be divergent). It is also considered to be on a continuum as indicated.

We shall now consider the effects of social isolation in more detail as they must later be considered in relation to research carried out here. It has been well documented that solitary confinement and social isolation can lead to emotional and mental states which may well have direct repercussions on spatial behaviours. Zubek's study (1973, cited by Lucas, 1976) showed that

subjects experiencing solitary confinement reported among other symptoms changes in body image, whereas those subjected simply to social isolation said they felt temporarily disoriented and experienced feelings of hostility and loneliness.

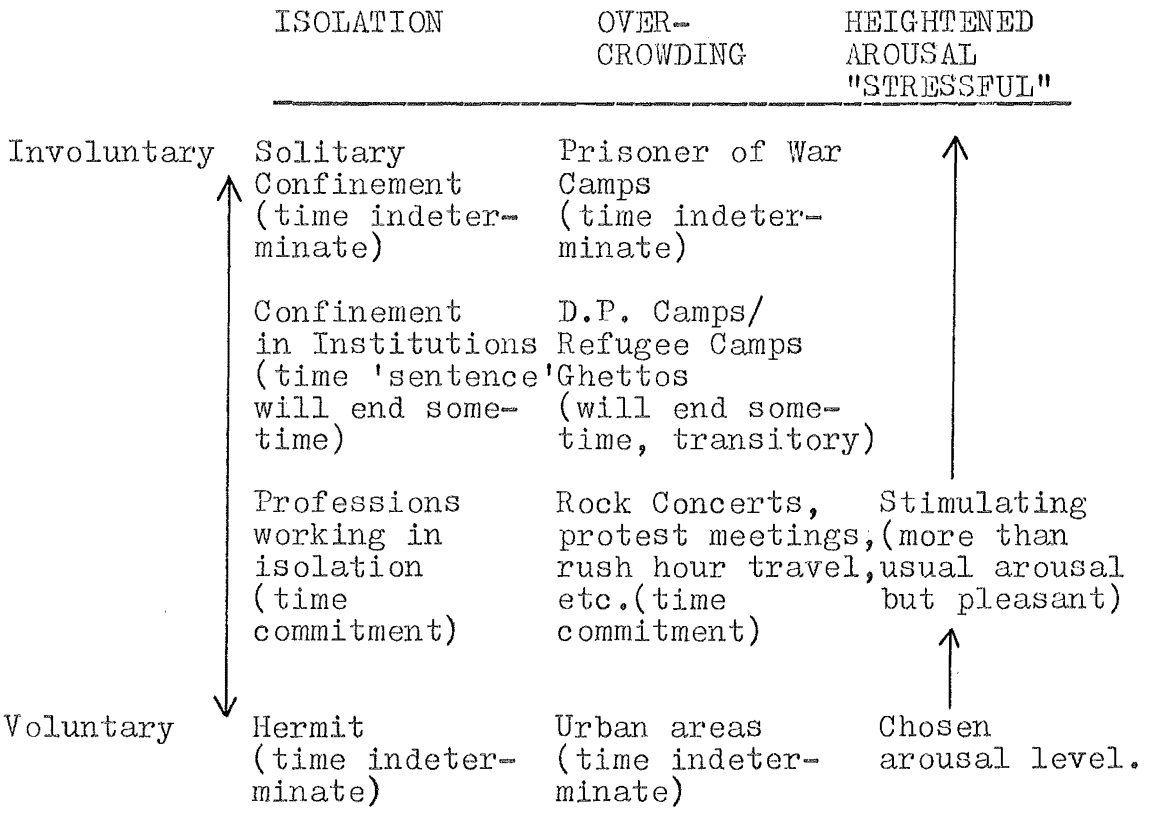


DIAGRAM 3: Postulated relationship between time factor, degree of personal choice exercised, arousal level and spatial situation.

Fraser (1966) indeed considered confinement, even without social isolation, as stress-inducing. Moreover his conclusion stood in agreement with Gunderson's (1963) study which showed that confined subjects experienced among other things anger, unrealistic fears and anxieties and depression. These evoked emotions have been shown in various studies to bias the interpersonal spatial response in one direction or the other. Horowitz (1968) suggested that depressed subjects might seek closer physical proximity, whereas Dosey and Meisel's (1969) study, appeared to indicate that conditions which challenged a person's self-concept and body-image would produce stress and would lead to greater spatial distancing.

While in experimental situations it has not been possible to replicate all the variables operating in involuntary social isolation situations, if the effects are one of degree, then research findings are still of some significance. Investigations into the spatial parameters of interpersonal interaction under such

conditions as willing and temporary social isolation (Altman and Haythorn 1967, Altman, Taylor and Wheeler, 1971) and voluntary confinement in restricted space (Pederson and Shears, 1974) have led to an increasing sensitivity to the relationship between such factors as personality differences, the extent to which the encounter situation is structured, the degree of social isolation and the extent of time for which the experience is anticipated to last. From these studies it has been shown that enforced spatial proximity for a short period may, at least for females under some conditions, heighten affiliative inclinations. This appeared to be an illustration of the relationship between the desire for social intimacy and the tendency to befriend those who are physically near, which has been shown in various studies of friendship patterns in neighbourhoods. (There appears in fact to be a cognitive interaction between the concept 'people like to be near the people they like' and 'people like the people who are near'). It may, however, also be explained by the absence of social taboos on tactile interaction for females. It

seems, however, from the work carried out by Altman and Haythorn that affiliative inclinations may only be realised in situations which are either socially structured, or temporarily limited, or in which the participants exercise some degree of choice. In situations in contrast in which individuals are exposed to increasing degrees of social isolation[1], spatial behaviours appear to be governed to some degree at least by the desire to 'structure', that is, to impose some kind of differential meaning on to the environment. This may represent an attempt to maintain an identity in a situation in which normal social roles are obsolete. It also seems possible that what has been described as 'territorial behaviour' by Altman and his associates, may be regressive in the sense suggested by Hallowell[2] (1961, ed. Washburn) in that it may have been an attempt to actually preclude more complex forms of social inter-

1. This is not simply the removal from other interpersonal relationships but also their ongoing distancing from the social environment, and from their usual role allocations.
2. Territoriality...functions as a barrier to social integration of a higher order and to more complex social composition and role differentiation.

action, or was erected as an emotionally protective mechanism once the usual social interaction framework was removed. That this might have been necessary is suggested by other studies which indicate that in some western cultures there is a social taboo on physical interaction between adult males (Meisels and Guardo, 1969). Thus the confinement of two adult male strangers in a condition which would under normal conditions be indicative of intimacy must by necessity lead either to a careful structuring of the spatial situation (the 'claiming by exclusive use' being a way of preventing the kind of sharing which would be permitted where constraints on physical contact were not operative) or to a rising level of anxiety.

This leads on to consideration of tactility and its influence on interpersonal spacing behaviours. Spacing in interactional settings is at a certain distance coloured not just by the social meaning of the distance but also by the possibility of tactile involvement. While cultures may tend even at fairly close interpersonal

distances to specify whether tactile interaction is permitted or not (Williams, 1966), the avoidance of unwanton spatial closeness may be as much an avoidance of physical contact as the avoidance of a close relationship (these are not necessarily the same thing). Tactility is very much a neglected dimension of interpersonal studies and its interaction with spacing behaviours has only been touched on very peripherally by studies of social spacing. Just as space may be used to indicate affiliative or aggressive impulses, tactility, it is suggested, can also be employed in the same way so that while some forms of touch may be comforting, others may be provoking[1]. The distinctive aspect of tactility, however, is that it must involve a reduction in interpersonal spacing, at times to that point when the distance between individuals is nil. The majority of the research into interpersonal distances

1. This may only be by cultural definition, such as the offensiveness of being touched on the head for Dusun males but not for females (Williams, 1966).

has omitted this realisation, as it has also failed to acknowledge that interpersonal spatial distancing has evolved out of a primary tactile symbiosis (i.e. the intrauterine and post-natal state). While a few theorists, notably Sartre, have drawn attention to the importance of relinquishing distancing to attain a new dimension of identity (the idea that one does not really know oneself until one experiences oneself on a tactile plane), the conditions under which this can be achieved have not yet been investigated.

3. iv. SPATIAL BEHAVIOURS AND CULTURAL TRAINING

The small amount of research that has been carried out to investigate cultural variations in spatial behaviours, has tended to be based on the premise of Hall (1959, 1966), that each culture has its own unique perceptual mode and that consequently the set of stimuli in any given environment will be perceived differentially, that is, according to this cultural

perceptual bias. While on the one hand Hall tended to suggest that this cultural bias was an interaction between a specific culture and the environmental contingencies operating in its geographic habitat[1], he also stressed concomitantly that cultural responses were essentially arbitrary. By arbitrariness he implied that the selection of a specific set of stimuli was not determined according to actual stimulus intensity or stimulus availability but by the cultural interpretation placed on stimuli, that is by a conceptual preference in terms of the cultural tradition. Thus avoidance of certain places (as inhabited by spirits for example) or of certain people (such as mothers-in-law or menstruating women) was not the result of the intrinsic stimulus quality of these places or people, but was the result of an imposed interpretation or conceptualization, which fitted into the total thought pattern of that particular

1. He specified for example that the Eskimos' predominant use of acoustic olfactory stimuli in relating to space was the result of surroundings which lacked differentiating visual stimuli and that the Japanese perception of and preoccupation with the intervening interval, the 'ma' was a consequence of a spatially restricted environment.

culture. In such a case a spatial response was not simply a response to a physical dimension[1] but was rather a response which was an interaction between actual stimuli and the cultural 'Weltbild'. By cultural 'Weltbild' is meant the total cultural comprehension and interpretation of existence both physical and meta-physical.

Although some measure of recognition has been accorded to conceptual as well as perceptual factors governing response to a given environment (for example, Hallowell, in Taguiri and Petrullo, (eds.) 1958), the tendency has been to use Hall's postulate[2] as the basis for expecting variation in spatial response without relating that response to an empirical investigation of culturally specific perceptual or conceptual modes. Whether this is because the investigation of a cultural

1. It was more than a cultural bias towards the perception of certain external stimuli in preference to or to the exclusion of others.
2. Baxter (1970) in fact raised it to the level of a "principle".

group's way of regarding existence and the weightings it gives to items and events within that environment is generally regarded as the domain of anthropology, or whether it simply reflects the lack of an appropriate methodology for such an investigation is not clear. It may indeed simply reflect the fact that research into cross-cultural aspects of spatial behaviour is still in its infancy. It has, however, meant that the small amount of cross-cultural research that has been carried out has been dogged by the following problems.

Firstly, Hall tended to postulate from well-integrated or homogeneous cultures, that is, he generalised either from groups which still maintained a fairly distinct cultural identity or which inhabited fairly distinctive environments. He did not, however, discuss the relationship between environment and culture, i.e. whether culturally distinctive groups living within a common environment would always show variations in perceptual mode, or whether culturally similar groups exposed to varying environments would show the same or differing

spatial responses. Although Hall implied in fact that there was no 'common' environment as such, this failure to identify what criteria determined the hierarchy of preferences of stimuli in any given situation was a major weakness. It left his thinking very much open to the criticism that it lacked empirical verification and was essentially speculative. More significantly still, Hall tended to treat cultures as 'static' givens rather than as modified and modifiable by changing influences and as varying across classes or the one particular society (particularly when exposed to other cultural patterns and removed from their historical and traditional environment). One of his most fundamental thoughts was that people 'learn to learn differently'; he did not, however,discuss the effects of some of that early teaching being carried out by members of other cultural backgrounds (either through the media or school), or, alternatively, by members of the same cultural group but who were going through a process of 'deculturalisation' (a loss of any clear sense of

possessing a cultural tradition; disorientation). In fact it must be said that while a considerable amount of anecdotal data has been collected on the varying possible effects of the integration and merging of divergent cultural traditions (Mead, selected papers 1964; Turnball, 1963; Mason 1971), there is little empirical data to elucidate the processes occurring. This is particularly pertinent as the cross-cultural research carried out in America is almost exclusively concerned with sub-cultural groups, a few of whom may represent a situation of genuine primary culture contact, but the vast majority of whom will be experiencing secondary culture contact. By secondary culture contact is meant a situation in which a child grows up in a family where both parents and grandparents may all have experienced both their own cultural tradition and the dominant culture of the society they are part of, to varying degrees and,consequently, have incorporated it into their interactional mode in differing ways. In

this latter case one might expect, not so much a simple conflict between appropriate spatial behaviours for ones own culture and that of the other culture (such as was observed by Hall for the social interaction between Arabs and Anglo-Americans, empirically verified by Watson and Graves, 1966) but rather various attempts at 'meshing' or, alternatively, deliberate attempts to create distinctive responses. If a deliberate attempt to retain a cultural identity is made, this may be marked by an over-emphasising of culturally distinctive behaviours. Such an over-emphasising has been proposed for the many distinctive verbal (Yiddish) and non-verbal behaviours of European Ghetto Jews and, it was suggested, it was fostered by both a need to retain group cohesion and was a means of maintaining a cultural identity.

It has, however, been suggested by Fast (1971) that the American situation is dominated by a merging or 'meshing' of cultural traditions. He stated - "when I began studying the behavioural patterns for subcultures

living in New York's so-called melting pot, I expected to find that they would maintain their differences. Instead I was tremendously surprised to discover that poverty conditioned them to behave with remarkable similarity", and he cited that Blurton Jones, when studying spatial behaviours in over-crowded areas with poor housing, found that "virtually everybody, regardless of their ethnic background stood about one foot apart". These statements suggest implicitly two reasons for a 'merging' of culturally distinctive patterns. Firstly, they imply that a reduced spatial area, as created by a situation of overcrowding may significantly modify previous spatial behaviours. If this is the case then the observations that Negroes in the street tend to greet each other at a greater distance, may represent some kind of compensatory mechanism. Although we are not as yet able to say conclusively the amount of space that an individual needs to function optimally or whether there is such an optimal space[1], it does seem feasible that if

1. Although animal studies, e.g. Calhoun (1947,1962) suggest that over-crowding may be stressful or, if prolonged, may result in pathological adaptations.

one's indoor environment is a spatially restricted one, one may tend to utilize public, that is neutral areas (e.g. streets, parks) as extensions to it (Lyman and Scott, 1967). Fast also implied that the degree to which one may participate in a cultural tradition and may maintain, by usage, a particular heritage, may be severely modified by situations of deprivation. He cited poverty as an example of deprivation but it could presumably be extended to include its psychological effects such as being with minimal prestige and having virtually no real opportunities for social mobility. If, moreover, the cultural traditions one has been brought up with have been marked by inconsistency, as in the situation of secondary cultural contact, and, if this is further confused by different spatial demands being made by others in one's environment, then one might expect one of two possible responses. On the one hand one might expect, as a result of the situation of gross uncertainty, a marked disregard for or at least unpredictability in non-verbal response. On the other hand, one might

anticipate the establishment of a set of responses which represent the least stressful and most reinforcing situation for the individual (using a simple conditioning paradigm), that is, an opportunist-type response (Mead, 1964). In other words, it seems probable that, if the individual is brought up in a situation in which numerous conflicting spatial responses are expected of him, he is likely to revert to assessing the situation in terms of actual interactional qualities inherent in the situation, either potential threat or affiliative possibilities. This is particularly likely in situations in which spatial demands are based on arbitrary (i.e. not visible) qualities ascribed to people or places[1].

Scheflen (1972) put forward a further interesting and suggestive thesis namely, that in situations of cultural change and transition (he spoke in fact of 'cultural revolution'), new modes of kinesic behaviour

1. Examples of this are public 'out of bounds' areas - grass in parks, parts of churches and the distance expected to be maintained from judges and magistrates in a court.

(including spatial behaviour) may evolve. Where such a cultural change is taking place a range of responses from the previous habitual non-verbal behaviour pattern through various transformations of it to the new variant may be observed concurrently. Scheflen suggested that American middle-class culture was going through such a period of transition and he commented 'the men and women of the new culture....seem to stand closer, touch more and display less flirting, dominance and metaphorical kinesics'. Scheflen did not suggest the reason for the change but if one follows his thought that a characteristic of institutions is their low tolerance for 'paracommunicative variation', one might postulate that a period of transition must presumably go hand in hand with a general weakening or softening of the societal institutions and by a substitution of desired responses (positively reinforcing responses) for the culturally prescribed, but no longer personally significant,ones. It is in fact suggested here that if the inherent meaning of behaviours in relation to their

conceptualization of existence is lost or forgotten or simply no longer applicable, then a set of non-verbal behaviours will be sought which fit with the emerging view of men and existence. This would in fact fit with the non-verbal changes noted by Scheflen, for one of the outstanding characteristics of the new culture in the western world appears to be the desire to recreate a Utopian society of love and brotherhood. Such a suggestion is supported by the analysis of Etziani (1975) of the current cultural situation. He wrote "...the modern world is step-by-step being replaced by a new pattern which will make more room for individual self-actualisation along with enhanced community values and which will gear the instrumental processes more closely to the advancement of humanist and social values..". This of course conflicts with the assumption that non-verbal behaviours occur 'out of awareness' and are virtually inaccessible to rational analysis. While it is accepted that non-verbal spatial "sets" i.e. the internalised pattern of spatial responses to given

circumstances, may operate for the main autonomously, it seems likely that, since they are learned, they can also be modified by further learning (and it is assumed that learning normally goes through a period of conscious awareness before being incorporated in an autonomous repertoire). In as far as non-verbal responses, and in particular spatial responses, are modelled on the behaviour of those around one as a child, there is no reason to presume that the process of learning need stop when one reaches adulthood, if the cultural tradition which supported the originally learned behaviour has altered. In fact it seems probable that one may become very conscious of ones non-verbal responses, particularly spatial ones, if they no longer fit the social environment (for example, if a particular distance, which was once interpreted as respectful is now interpreted as stand-offish, snobbish). Mead (in collected writings, 1971) also suggested that in situations in which cultural adaptation is instigated by a particular age group, a reversal may occur so that the older generation may learn

the non-verbal modes of the new culture:

> "the culture of the next generation may be accepted by the older generation as more valid than their own, and in that case they may invade it".

Having outlined some of the theoretical problems in the field, the problems of the empirical studies become apparent. What in fact we find are measurements of spatial responses for different cultural groups, but having established a variance (which, of course, is in its own way important), there is a lack of research determining which variables are responsible for the differences. This is particularly pertinent, as there has been a tendency to derive hypotheses based on the implicit assumption that if one observes different groups in a shared public space then the responses will be exclusively determined by a cultural spatial response set, i.e. that the environment is an equivalent stimulus or set of stimuli for all individuals (e.g. Baxter, 1970, Aiello and Jones, 1971). From the discussion so far it will be apparent that a variety of postulates could be

put forward for the cross-cultural differences:

1. Each culture has a different set of culturally prescribed distances for specific types of interaction. To test this, repetition of socially equivalent situations would be necessary.

2. Each cultural group is responsive to a common environment differentially, so that the stimuli will not have a single 'valence' but will vary in intensity and significance for each group (i.e. the spatial variations may be the result of divergence of response to perceptual stimuli). This theory could be tested by observing responses in different environments.

3. The degree to which a cultural group, as a minority group, feels threatened/accepted by the predominant culture, will affect the spatial distances, so that one might predict that the greater the stigmatisation of (i.e. projection of negative attributes into) a particular cultural minority, the more likely protective spatial configurations are to occur.

This in turn may be determined by the density and percentage of one's own cultural group in the vicinity (Bennett, 1974).

4. Cultural variations may reflect both different assessments of the situation and different feelings about oneself in that situation. Some of the observed cross-cultural variation may indicate that individuals are experiencing their environment at different arousal levels. These will be a product of such factors, as the degree to which one feels one has a right to be in a particular place - as determined by the social expectations of who will go where; the familiarity of the place and its distance from ones habitual spatial range; the level of certainty of what behaviours are permitted in a particular place, i.e. the extent to which one feels obliged to pay attention to other people's behaviour and the degree to which one may be made conscious that one's responses are somehow divergent.

5. Cultural variations may be affected by the degree of conspicuousness of a particular social group. The extent to which one can blend in, in a mixed cultural setting will affect the level of consciousness of one's behaviour.

If the cultural group is instantly distinguishable because of colour, physiognomic features, etc., it will presumably feel more distinct than members of cultural groups whose distinguishing mark is say, linguistic. Naturally this will also be affected by the degree to which the particular cultural setting is a mixture of racial stocks (i.e. the more racially pure the predominant population in a particular place, the more those who are clearly different will be noticed/paid attention to).

From such a perspective even the most comprehensive and sensitive studies of cross-cultural spatial usage in the natural environment, such as Baxter's (1970), are fraught with difficulties. Baxter's study is based on the explicit assumption that 'culturally differentiated

groups tend to prefer different spatial arrangements of participants involved in social interactions and usually prefer to interact with each other at different interpersonal distances' (thus following Hall's original postulate). The implicit assumption of course was that these interpersonal spatial preferences would be the dominant schema or preponderant variable in the setting chosen, i.e. that the stimulus valency of the environment will be a relatively neutral one and that the interactional variables, such as affiliative inclinations and demonstrations of dominance will be subservient to this public-social interpersonal display. However, while Baxter's results certainly shared what seemed to be a culturally bound variation in interactional distance it is disputed whether the meaning can be drawn from the study that this was exclusively the result of culturally learned interpersonal spatial distancing. Indeed the results are themselves rather curious in that one might expect that, with such a random selection of pairings, interactional variables would reveal themselves

as the environmental situation was one of relative anonymity (on the assumption that social constraints would only be weakly operative). Instead it appeared that certain environmental or social variables curtailed any showing of variation[1]. The interpretation of the findings is further complicated by the lack of additional data on such factors as degree of relaxation observed for different cultural groups and social class membership. The latter information would have been particularly significant as Baxter's findings seem to run contrary to suggestions that 'members of poverty subcultures tend to be rather similar to one another in spatial orientation behaviours' (quoted from Aiello and Jones, 1971; a similar opinion was expressed by Fast, 1971). What Baxter in fact seemed to find was an inter-

1. One might explain the culture specific response patterns as either a differential response to population composition or to population density. Bennett's (1974) study suggested, for example, that Negroes might be able to tolerate the presence of a smaller percentage of their own race in a mixed cultural environmental setting better than Caucasian Americans. Members of cultures with more prohibitions against tactile interactions in public would presumably be subject to more stress when population density were high.

action for Negroes and Chicanos between indoor and outdoor settings, with the latter group exhibiting a more clustered/compacted response outdoors and a more expansive, space-occupying response indoors, while the Negroes exhibited the reverse. Although Baxter concluded from this that Chicanos felt more comfortable indoors (i.e. that their closer knit grouping outdoors reflected their discomfort in a setting which lacked spatial partitioning), this was based on the assumption that the closeness of an interacting couple reflected their sense of discomfort or the external threat to continuing interaction. It could, in fact, equally well be interpreted as related to the permissible degree of intimacy in the varying situations, or might only reflect variations in the use of other contact maintaining behaviours such as eye-contact, postural inclination by Negroes (i.e. the responses might actually be equivalent in level/degree of interaction maintenance behaviours). While Baxter had assumed that all groups would 'interact more proximally in indoor settings' (on

his basis of his research with Phelps, 1970 and Little's 1965) as greater degrees of interpersonal intimacy were expected in indoor settings, there is another research to suggest that this need not necessarily be so. Sommer (1961) drew attention to the fact that while comfortable inaction distances in public situations was at the maximum five (5) feet, the normal seating distances in homes are frequently more than this (8 - 10ft.). It has also been shown that parents interact with their children (an interactional spacing which was not recorded in Baxter's study) no more closely than other adult strangers.

One of the hypotheses put foreward to explain cultural divergencies in spatial distancing was the concept of contact and non-contact cultures. The differentiation was taken over from ethological studies, where it was considered to be an interaction between genetically-constrained behaviour and the environment. One particularly suggestive animal study, for example, appeared to be able to show a relationship between contact-

willingness and climatic conditions, with those animals living in subtropical conditions showing the largest amount of tactile interaction, with a decrease towards the extremes of heat and cold. While the division of cultures into contact and non-contact[1] appeared to exhibit an analogous pattern, the analogy is somewhat misleading. Although it is possible that the dominance of what Balint has called a 'sight-oriented' or 'touch-oriented' perceptual mode may be related to thermal and olfactory conditions, the human variations in cultural interaction distances appear to be preponderantly subject to social rules. That this is so can be supported from several findings. Firstly Williams (1966) in his study of the Dusun found that the willingness to be spatially close and physically accessible was subject to intricate cultural prescription which varied 'at different periods of enculturation' (i.e.

1. Argyle (1974) listed as contact cultures Arabs, Latin Americans, Southern Europeans and a number of African tribes, and as non-contact, Northern Europeans, Caucasian Americans, Indians and Pakistanis.

tactile prohibitions might only be operative when one acquired specific status such as adulthood, or wedlock). Secondly, Little's (1968) definition of a contact culture ('one that has a minimum of taboos against physical contact in public social situations') is based exclusively on behaviours in 'on-stage' situations. This meant that while a particular culture might have a predominance of 'compensatory symbolic substitutes' (Williams, 1966) for tactile interactions in public encounters, in the form of gestures, signs and postures, it might nevertheless permit considerable physical closeness and tactility in 'off-stage' situations. This being the case, the ethological comparison is largely inapplicable.

It has been stated by Triandis (1975) that '... cross-cultural studies provide the most promising paradigm for research in social psychology'. While this is not disputed, it is maintained that such studies must incorporate a detailed understanding of the cultures with which they are dealing. This task has, however,

been complicated by what has happened to cultures in general.

The concept of culture has to this point been equated with the membership of particular racial groups. It is, however, suggested that the era of distinctive cultures may be drawing to a close. Both as a result of immigration and colonisation and as a consequence of the film media, very few cultural groups have been able to maintain those behaviours which constitute their cultural uniqueness and identity without exposure to and experience of alternative spatial distancing norms. While many cultural groups may try to preserve and revitalize those aspects of their way of life which seem to epitomize their heritage, they are not immune to the alternatives and it seems inevitable that some modelling must occur. Thus cross-cultural studies must attempt to establish the degree to which and situation in which unmodified culturally prescribed responses remain. This can presumably only be carried

out efficiently with longitudinal studies.

However, if it can be substantiated that culturally taught interpersonal distancing is established by adolescence, then variations between adult and adolescent response in a particular cultural group may reflect the degree to which the behaviour is reverting to a 'supra-cultural' mean. Thus Baxter's study, regarded from such a viewpoint, would suggest that if the Anglo-American response, as the dominant and socially-reinforced response pattern, is the mean, then both the black and Mexican adolescents (particularly the males) are striving to attain it (i.e. their response resembles that of their Anglo peers more than that of the adults of their own cultural group).

Unless truly genetically-tied spatial requirements exist, culturally distinctive spatial responses may be replaced by interactional distances which are distinctive for regions. Indeed it has already been reported that Americans show regional variation in their non-verbal responses. This is not to suggest that all

once-distinctive groups will be able to take over a commonly shared response repertoire at the same speed (particularly as this repertoire may be a changing one, especially in areas subject to a mobile population). This will presumably be subject to some constraint and tensions particularly in cultures which are "tight" (Pelto, 1968); that is, those which specify behaviour in many social situations and rigidly enforce it. That this might be so is supported by the findings of Connor (1974) for Japanese-Americans (the Japanese culture being a 'tight' one). Connor was able to show that the expression of socio-emotional needs for the Japanese Americans was quite distinctive from that of Anglo-Americans and still very much embedded in their cultural tradition (or possibly in the stereotype of what made the culture distinctive). Thus their need for order, affiliation, abasement and nurturance would bring with it specific spatial inclinations and response willingness. In contrast one would anticipate that members of cultures which Pelto classified as 'loose',

(those which do not specify social behaviour and do not enforce norms), would more easily adapt to variations but may in the long term be less influenced by these than tight cultures. Indeed, rigidity in cultural prescriptions may reflect a phase in which that culture is experienced by its members as threatened or undermined, either by the loss of its emotional and spiritual underpinning or as the result of the impact of external cultural influences. Such a supposition is in accordance with Campbell's (1964) postulate that 'the weakest ethnic group in the local cluster should be the most ethnocentric'. In a situation in which the impact of one culture upon another cannot be avoided a'relative acceptance of outgroups' and'a comparatively open, communal life-style' (such as Thomas, 1974, proposed was typical of Fijian culture) may be the necessary condition for cultural survival.

3.v. SPATIAL BEHAVIOURS AND POPULATION DENSITY

The research into the human use of space has on the whole failed to acknowledge distinctive modes of experiencing space and secondly has tended to ignore the reasons for the mounting and intense interest in both possible human spatial needs and interactional spatial responses. It is felt that these must be explored, for while they do not necessarily add clarity to what is in any case a fairly confused and conflicting body of research, they do indicate the fundamental questions which lie behind the studies which have been carried out.

Space, while being an 'intervening interval' between things (and, in that sense, static), also contains a dimension which is allied to usage and is an interrelationship between space and motion. In the natural environment[1] spatial usage is for the main determined by

1. That is, where humanly imposed constraints are minimal or non-existent.

the human activities which it is physically possible to perform within a given environment and the activities humans desire to carry out in a particular terrain. The nature of this interrelationship, although not entirely free from cultural traditions, can be observed in slash-and-burn cultures and in nomadism, where the life style is both a response to environmental constraints and yet, as a mode of existence, requires a particular allocation of environmental space to carry out this survival form (so that a decrease in space or a prohibition in movement placed on people, could destroy the delicate, ecologically viable existence mode).

With increasing population density, however, the areas of the environment which are spatially unrestricted[1] are shrinking radically. As a result the total available environment is becoming increasingly defined in terms of socially presented spatial usage as distinct

1. Areas that belong to no-one and may be used by anybody.

from environmental contingencies determining appropriate space use. This means both that space usage may be environmentally inappropriate (in terms of the total ecosystem) and, at the same time, that an individual's or group's freedom of movement within the environment may be very fully, even totally, defined and restricted.

While it is recognised that groups of individuals even in relatively unrestricted areas certainly tend to impose a 'structure' on their environment, in that they identify their domain in terms of distinguishing features and preferred places, it is postulated that the need to mark off an area either from other groups or other individuals may be closely related to population increase. That this may be so is supported by the findings of Baum, Riess and O'Hara (1974) that '...the addition of screening walls allowed reduction in personal distancing needs...', and is suggested by Lyman and Scott's (1967) hypothesis that the lack of individual space may lead to attempts at 'insulation'

(the erection of barriers). However, if the 'particularisation' of parts of the spatial environment may be essential for group and individual identity maintenance, in that it is a way of imputing meaning onto what would otherwise be a spatial 'no-man's-land', the utilization of ownership concepts (e.g. 'public', 'private land' etc.) introduces a new dimension into the space relationship. For while the act of nomenclature in itself will be a psychologically supportive process, the experience of an unevenly divided spatial environment, unless bolstered by a meaningful rationale, will create a situation conducive to social alienation. This may be all the more acute when the spatial demarcations also involve an uneven distribution of resources (Le Gay Brereton, 1968).

From a human viewpoint space is both land to which one stands in a particular relationship and the total possible area through which one may move. While it is apparent that these two distinctive ways of regarding space may be interrelated, in that, for example,

ownership may exert constraints on the extent to which an individual will move away from the claimed spatial portion, whereas the lack of a land-based claim may promote mobility, it is also evident that within the modern world the balance between the two is a changing one (and changing for different strata of different societies at different rates). It is suggested here that these changes are directly related to what has been termed the 'population explosion', but in terms of human experience, it is the effect of urbanisation and the advances of modern technology which have left this new and potentially stressful environment situation. While on the one hand sections of communities find themselves obliged to take drastic steps to maintain their spatial claims, others find themselves obliged to accept either temporary land rights (by renting) or may find themselves with no land at all. Moreover, the previous means of coping with either situation, should it become physically or mentally intolerable, namely emigration, has for some people been made virtually

impossible for a variety of reasons. Consequently, individuals may now find themselves having to accommodate to externally imposed spatial restrictions which both clearly define their extent of spatial claim (by asserting and delineating other, such as governmental, claims) and circumscribe their freedom of movement. While such restrictions and curtailments are not in themselves new, what is quite distinctive about the current situation is the extent of our geographical knowledge, so that we are aware that the earth's surface as a whole is divided up into spatial claims. This does not mean of course that there are not physical spaces where the imposed claims are exceedingly weak, but rather that the means of reaching such areas may be prohibited. It also means that many individuals must live in the mental climate of perceiving that an allevation of the spatial situation in which they find themselves is almost non-existent (although the situation itself may be ameliorated). In such a social predicament the

social psychologist may be employed to establish whether human beings have basic spatial needs[1] or to discover environment improvements, which, if not basically altering the status quo, will nevertheless provide a situation which will reduce the most obvious and unacceptable aspects of high density living.[2]

It has been suggested that the growing awareness of a spatial dimension and of environmental contingencies in general, affecting behaviour may be directly linked to the developing consciousness of the world's rapidly expanding population. While it may be argued that only a limited section of the community is actually informed as to the extent of the problem, it must also be considered that many individuals are experiencing the effects of the population increase whether they are conscious of them or not. Indeed those individuals born before 1930 have already experienced a doubling of

1. Either for land ownership or for 'territory', or for a certain degree of mobility.
2. This is assuming of course that the purported relationships between family instability, crime, mental illness and urbanisation can be verified empirically.

the world population within their lifetime. Furthermore, the previous doubling occurred from about 1850 to 1930 and it must be questioned whether we are yet in a position to assess the effects of this rapid population increase. Historically then, the lack of space particularly as a result of high concentrations of population is a recent phenomenon. There is a clear transition between that time when one needed to maintain one's 'space' against the encroachment of the natural environment and to involve oneself in the prevention of the reversion of agricultural land back to its primal state (certainly true in Europe at least until the fifteenth century), and the current situation in over-populated areas, where movement is constrained both by space ownership being completely 'sewn up' and by the concrete, brick and stone edifices which maintain and support these constraints. An important aspect already mentioned of the cultural delineation of space within modern societies which undoubtedly goes hand in hand with high-density living in urban areas, is the

conceptualization of numerous areas around oneself as carrying a spatial prohibition. From this viewpoint, the sociological division of the total environment as perceived by the individual into territories, appears to fall short of an understanding of the issue, as it fails to acknowledge the conceptual interaction between the areas an individual is permitted to use, and the areas he is prohibited from using. The effect of such spatial 'out-of-bounds' areas on the individual is a virtually unexplored area. In fact one might postulate that the effect will vary according to whether the individual can leave the area carrying a high level of prohibitions or whether he is obliged to live permanently within the clearly defined and highly restricted spatial environment. The kind of impact which may be made by spatial prohibitions can perhaps be contemplated more easily with an example: a school-age child living in a flat without a garden has only that area as his basic living space (and that dependent on the attitude of his parents to his using part of <u>their</u> living-space). He

is legally obliged five days a week to go to school (i.e. he is therefore prohibited within school hours from using other communal spatial areas) and to reach the school he is only permitted to use highways and by-ways (even though it might be pleasanter or shorter to cut across private property). The school area however also in the main carries a time-related prohibition as the child is not usually permitted to be at school after school hours. Free time spatial areas also carry spatial limits- he may use the park, but he must keep off the grass; he may use the swings, but only as long as he is under fourteen; and he can anyway only use the park until it too closes at dusk and becomes a further out-of-bounds area. (The example of course indicates too the intricate relationship between space and time within modern urban environments.) One might presume that dependent on the time of day or time of year, the child will have a fluctuating sense of the degree to which he is spatially restricted. He will moreover have had to be exposed to a complicated phase of learning when and

where he is allowed to move, and the reasons, if any, which are given for the spatial prohibitions may appear either to be bound up with dangerous human emotional qualities[1] or alternatively with an acute sense of space shortage[2]. Further, even public territories, such as streets, churches, museums, may only be open for public use at certain times, so that the conceptualization of areas one is allowed to use at any one time may be extremely limited. Moreover all areas of spatial usage within urban environments tend to be linked with specified permissible behaviours, so that frequently even the basic living-space may be tied up with a series of injunctions[3].

It has already been noted that some researchers have suggested that spatial restriction and lack of space

1. Children may not stay at school after school hours because they cannot be left on their own and might get up to all sorts of mischief; one may not stay in parks after dark because one may be assaulted.
2. One may not walk on the grass, because too many people live here and therefore there will be no grass left if everybody walks on it; one may not park longer than a certain specified time in a parking lot, because someone else also needs to use the space.
3. Don't jump on the floor, you'll disturb the neighbours; don't run across the room, you'll break something, etc.

may lead to behavioural adjustments in spacing so that less interpersonal distance may be required in encounter situations. There is, however, another aspect of the spatial environment which must be taken into consideration and which may affect spatial responses. One of the characteristics of growing urban areas is the constant pressure to accommodate increasing numbers to achieve this. There has been a tendency for spatially uneconomical buildings to give way to ones which concentrate higher densities of people within a given area and which frequently attain this by 'high rise' developments (two further aspects of spatial experience which have not been investigated). This has led to a situation in which individuals are exposed to a fairly continuous alteration of their perceptual environment. If Scheflen (1972) is right in stating that'the stability of a transaction depends.... on the stability of its environment', then it might be mooted that the constantly changing situation may lead to on-going changes in

spacing behaviour[1].

A concomitant development with population increase, which must also be considered, has been the evolution of a variety of forms of transport which incorporate a significant early childhood motion experience namely 'passive movement' (i.e. being carried). We do not yet know what effect the transversing of large areas of other people's space in neutral areas (roads, railway lines, air space) may be on the individual, although possibly the fascination of this type movement comes more from the satisfaction of dependency needs than from its spatial implications. It might, however, be asked, whether a relationship could exist between the shrinkage of available living space, the curtailments on spontaneity of movement[2] and the need for individuals to be excessively mobile.

1. There could of course instead be a clinging to the spacing patterns appropriate to a time when more space was available.
2. By this is meant the right to extend oneself and move in any direction one pleases.

The total effect of this unprecedented situation as regards both space and movement within space has been to ask how it will affect man. It is not yet possible to demonstrate that man has a basic genetically determined spatial requirement for survival. In fact it appears from observations (albeit rather anecdotal in character) that in conditions of close proximity human beings may adapt by a kind of freezing, a behaviour which has been described as treating other humans as 'non-persons'. If this is the case it may be postulated that as the population continues to increase an individual may find himself more and more employing such techniques as cocooning and freezing. The question remains, however, of whether such behaviours promote survival or are already indicative of physiological and psychological disturbance. This is one of the major difficulties in trying to establish whether certain spatial responses are beneficial to general social behaviours or whether they simply represent an adaptation to a situation which no longer represents an optimal situation for man's

physical and psychological development. On the level of analogy one must consider the detrimental effects of over-population on animal species as demonstrated by Calhoun (1962) and as shown by Darling (1952). In both instances it must be noted that a situation which produced physiological and behavioural disturbances was not related to available food supply (as in both instances food was available) but simply, it appeared, to animals having to live within restricted space. Thus it seems possible, although this is still on the level of a hypothesis, that while the physical number of humans it is possible to keep alive on the earth's surface may be determined by food production[1], the number which it is possible to maintain healthily within restricted spatial allocations may already in some areas be surpassed.

To continue the analogy further, the animal studies referred to have indicated that biologically salient behaviours may be constrained by density of population

1. This is clearly related to the total balance of the earth as an ecosystem.

and the physiological state arising from the stress may act as an inhibitor on normal patterns of behaviour. It has, as already mentioned, been postulated by Altman (1975) that the determining concept for spatial behaviour is privacy. It must, however, be asked, whether privacy only becomes an overriding determinant of spatial behaviour in situations of increased spatial occupation (high population density areas), for it has been noted that in crowded conditions deliberate attempts are made to curtail interaction and thus prevent over-arousal and the spatial implications of close proximity. This is of course, to suggest that density of population may determine spatial behaviours in the direction of privacy or intimacy.

It is apparent that our awareness of the possible behavioural changes brought about by a changing social and cultural situation is still rudimentary (undoubtedly in part because we are subject to and part and parcel of that change). There appear to be several important variables, such as population density and extent of

spatial prohibitions, which may interact with other variables affecting spatial responses. However, until more detailed study is carried out, both in the natural environment and by relating people's responses in experimental settings to their habitual spatial situation (in the various dimensions indicated), the implications of the problems delineated here will not be known. It nevertheless seems likely that the pressures felt as a result of the changing world spatial situation may in part explain the rapidly growing interest in and sensitivity to a spatial dimension.

3. vi. DEVELOPMENTAL ASPECTS OF SPATIAL BEHAVIOURS

To date, there has only been a relatively small amount of research carried out to investigate developmental aspects of spatial responses. Moreover, the studies that have been carried out appear to be exploring varying types of spatial behaviours. While some have been concerned to measure actual interactional distances

(mainly in dyadic situations, e.g. Willis, 1966) others have been observing spatial 'demand' or 'claim' behaviours (e.g. Esser, 1968, Sundstrom and Altman, 1974) and still others have been involved in establishing whether children use 'social schemata'[1] (e.g. Guardo, 1969, Tolor and Orange, 1967). Further, there appears to be very little attention paid to the types of space in which the observed behaviours were occurring[2] or whether the children were using 'ownership' or other delineating concepts in responding to the environment[3]. An additional problem has been that some studies have tended to treat children as a category (e.g. Tolor and Orange, 1969, Tolor et. al., 1971) so that responses for children of varying ages have been combined, thus losing any spatial variations

1. Despite the fact that the relationship between such postulated cognitive 'sets' and actual spatial responses has not been clearly substantiated.
2. In fact the majority occurred in either publicly shared space or space owned by other people.
3. It is important to establish whether different cultural or social-class groups understood or used these concepts differentially.

which may be linked either with specific developmental stages or with differing age-linked cultural expectations. It is then with considerable caution that one must regard the conclusions drawn from studies into children's spatial behaviours.

In this section the research to date in the field will be discussed and subsequently an attempt will be made to link the research conclusions with theories of child development (as related both to the process of concept formation, the learning of social norms and expectations, and the growth of identity). While it may seem rather curious that a developmental approach to spatial behaviours is virtually non-existent (certainly non-existent in terms of a systematic developmental approach, Evans and Howard, 1973), the reason for this lies at least in part in the fundamental assumption made about the spatial response repertoire. It has generally been accepted that adult spatial responses conform to social schemata, and that these are fairly

stable throughout adulthood[1]. Consequently the tendency has been to regard children's spatial responses as a gradual acquisition of the mature socially and culturally appropriate repertoire. From such a perspective, apparent deviations from what appears to be the normal response pattern are seen as inadequate responses. Weinstein (1965), for example, interprets the atypical social schemata responses of children (8 - 12 years) classified as emotionally disturbed as their not having developed 'the normal adult schema which organises humans as a close unit'. However, more detailed research into the spatial behaviours as well as their responses to social schemata tasks of 'normal' children of various ages, still needs to be carried out to demonstrate the validity of this fundamental premise. Although Pederson (1973b) has already concluded that there are 'consistent monotonic, developmental

1. This assumption needs verification for it is possible both that these may be alterable through consistent exposure to other spatial interaction patterns or that such schemata may at times lose their compulsion if other response sets/alternative schemata are operative.

trends in personal space' and the study of Aiello and Jones (1971) has been taken to demonstrate the transformation of childhood interpersonal spacing into the adult cultural interactional norm[1], it is questioned here whether these assertions have been conclusively demonstrated. It is considered possible, and this will be discussed later in this section, that spatial behaviour in childhood may serve additional functions to its adult counterpart, so that, while it is not disputed that children do acquire knowledge of socially appropriate spacing, it appears feasible that children's spatial responses may at times meet specific developmental needs.

Unless we assume that human spacing behaviours conform to a structural framework[2], then it is necessary to ascertain how spacing behaviours are learned. Since the majority of researchers have rejected the idea

1. It has already been pointed out that this may not necessarily be what is occurring.
2. By this is meant an inherited set of distancing constructs which enable the individual to know intuitively what is spatially appropriate or desirable.

that spacing norms are inborn in humans[1], it is indeed rather strange that there have only been rudimentary attempts to understand how knowledge of these socially appropriate distances is acquired. Perhaps this can partly be explained by the fact that the research is still largely at the stage of collecting data to demonstrate the gradual acquisition of adult interpersonal spacing behaviours. The assumption does appear to be made, however, that spacing behaviours are not directly taught. This has possibly been deduced from the idea that spatial behaviours are performed 'out of awareness' and therefore cannot be oonsciously taught. Such an assumption may be questioned. While adults may not give spacing "lessons", it seems likely that they do show disapproval of socially inappropriate spacing behaviours. That this is probably so is supported by the findings of Fry and Willis (1971) that

1. Except perhaps in the case of 'territorial behaviours', although this is rarely stated explicitly.

children from at least eight years old upwards evoke negative responses from adults if they move too near them. Although Fry and Willis interpreted this as the children having developed 'the capacity to elicit personal-space invasion behaviour in others', it seems likely that what has been observed[1] is adult approbation of social clumsiness or unawareness at an age when it is considered by adults that this inter-personal sensitivity should by and large have been achieved. That adults do use both negative and positive punishment (both by reprimanding and by with-drawing attention) was also noted by Leach (1972, in ed. Blurton Jones) with regard to retarded four and five year olds who still showed the typical early childhood spatial response which requires a referring back to the care-taking person (this will be discussed in more detail in relation to developmental theory). Thus it seems that there is active modification of children's

1. The intrusion or invasion concept is itself rather suspect.

spacing responses in the direction of the social norms for a given culture, although further studies are needed, particularly to elucidate the relationship between training in atypical spacing behaviours[1] and the acquisition of social norms.

While some deliberate modification of children's spatial behaviours may occur, it does seem likely that children may also acquire a conformity to social spacing expectations by modelling both on adults and other children (this may explain why the study of Tolor, Warren and Weinick, 1971, showed a variance between parental spacing tendencies and that of their children). For all the inadequacies[2] of this latter study, it is an important one in that it does attempt to establish empirically whether there is a relationship between the interpersonal spacing of parents and their children and does try to investigate the nature of this inter-

1. This would be as a result of learning from adults who either demonstrate or reinforce culturally divergent or idiosyncratic interpersonal spacing.
2. Such as their amalgamation of responses from children of a wide range of ages and their use of schemata exercises and self-report measures without relating this to actual apatial behaviours.

action. While the results of the study must be treated with considerable caution, the indications of subtle and differential influences resulting from the quality of parent-child interaction are most suggestive. There does indeed already seem to be some additional experimental support (Hetherington in ed. Grinder, 1975) for the effect of interaction with parents on a variety of non-verbal behaviours, including interactional space. In Hetherington's study it was possible to show that adolescent girls exhibited marked variation in encounters with opposite-sexed partners depending on whether they had grown up without a father because of death or because of divorce or whether they came from an 'intact' family. The study of Rubin (1969), although dealing exclusively with children's schemata responses to figures labelled 'mother' and 'father' further suggests some of the factors (sex and achievement in this case) which may lead to variations in the extent to which a child may feel himself or desire to be closer to one parent or the other and may therefore affect the degree to which he models on their behaviour. Although the results are

somewhat complex, they may possibly indicate that achieving lower-class children (except white boys) seeking to distance themselves from their parents may be indicating their rejection of them as social models, (although it may only represent their increased sense of confidence and autonomy.)

Another study which pays attention to the possible effects of modelling was that carried out by Mallenby (1974). Mallenby was able to show that hard-of-hearing children are able to modify their interactionsl spacing behaviours when allowed to become integrated with a group of normal children[1]. Although he failed to investigate the reasons for the different spatial distancing exhibited by the socially isolated hard-of-hearing children and therefore was unable to demonstrate whether the response variation between the two groups reflected the lack of social schemata or the implementation

1. 'The hard-of-hearing children who were afforded more information about and experience with normal children, were found to exhibit personal space similar to that of normal children'. (Mallenby, 1974).

of alternative schemata by the hard-of-hearing children, the possibility of the alteration of interactional spacing patterns is extremely important. Firstly this study suggests that the norm in interpersonal spacing may be the result of experience but that the learned response pattern (or alternatively the lack of it) may not, at least with children, represent an absolute deficit. Moreover, the extent to which the original response of the handicapped children reflected specific situational variables (e.g. social isolation) or variation in arousal level (the feeling of being different, stigmatised), may, if it can be demonstrated, illustrate the extreme vulnerability of a basic social schema. The norm may indeed be a very relative distance.

Spatial behaviour appears, from the research available, to be intimately related to the acquisition of sex role. However, while it is now generally accepted that sex role differentiation is already established to the extent that it is difficult to alter after the first eighteen months of life, the spatial dimensions of gender

identification may not be clearly demonstrated until much later[1]. Although there is very little actual research into spatial behaviour in early childhood to verify this, the main body of child development literature does suggest that when interactional play is first initiated[2], then this may be with children of either sex and no differentiation in spatial distancing appears to have been observed. While it could be argued that the general tendency for younger children to use overall more space (Meisels and Dosey, 1969; also suggested by the results of Tolor et. al., 1971) may have blunted this perception or that adults tend to see what they want to see[3], it could quite reasonably be argued that pre-schoolers have not yet established any firm sexual identity[4]. This is not to imply that quite small children (three to

1. If the findings of Aiello and Jones, 1971, can be accepted, then there may in fact be cultural variation in the time by which a child is expected to show sexually appropriate spatial behaviours.
2. This is after the phase of parallel play when the child has tended to ignore the spatial presence or proximity of other children.
3. There is possibly the assumption made by adults that small children show neither sexual or racial differentiation in their interactions with other children.
4. This is not really achieved until well into adolescence.

four years old) may not be aware of types of behaviours which are performed exclusively by mothers or fathers, but that their actual identification at this stage may not be very clearcut (so that little boys may wish to play having babies and little girls may play going to work, etc.). It seems possible in fact that spatial interactions may in childhood be predominantly determined by their general affiliative implications. This would tend to stand in agreement with the findings of Blurton Jones and his associates who have observed that pre-school children tend to avoid aggressive children and would tie in with the findings of Guardo (1969) that children in schemata tasks place the smallest distance between the representation of themselves and best friends. Nevertheless, if there is a general overall agreement in the socio-emotional meaning of specific spatial distances, there does appear to be variation in responses of boys and girls as they get older, e.g. Meisels and Guardo, 1969, noted that while girls showed a consistent pattern of larger spatial distances in negative affect

situations, boys showed a gradual decrease in this space, presumably conforming to the sex role veto on boys showing fear spatially.

These more pronounced sex role oriented responses would seem to tie in with the changes in interaction patterns which have been noted in the general literature. These are normally that during the latency period there is a change to playing fairly exclusively with same-sexed friends, while in adolescence (post-puberty) there is a gradual change to other-sexed partners. These affiliative preferences have also been recorded in spatial schemata measures. Meisels and Guardo (1969) commented that '....both sexes placed themselves closer to same-sexed peers in earlier grades and to opposite-sexed peers in later grades'.

The meaning of these interaction preferences has not really been elucidated, although they can possibly be explained in terms of identity consolidation. If the early childhood years are of paramount importance for the determination of later sexual orientation and behaviour,

the establishing of a socio-sexual identity in the community at large may be facilitated by interacting with those whom one is meant to be like. An interesting recent study (Rekers et. al., 1977 , although of an N - 1 type), moreover, suggests that affiliative bonds in the latency period are only made with those whose overall behaviour conforms to socially determined sex role norms. They state (quoting the study by Stoller, 1970), that 'peer rejection is suffered by boys who persistently display pronounced feminine sex-typed behaviours'. By training their disturbed subject then in behaviours typical of a boy of his age[1], they were able to assist the boy in obtaining peer group acceptance.

The whole question of spatial interaction between peers is a very interesting one and one that has largely been ignored in adult studies (based on the assumption that adults all react on a 'class'). Willis (1966)

1. This included training in the willingness to engage in rough-and-tumble play which involves both spatial proximity and tactile interaction.

however, studying three different age groups of children found that 'peers approached one another more closely than they approached those who were older' but this was not shown in their interaction with children younger than them. The question of course arises whether the greater distance was maintained from older children because they were physically larger and therefore potentially more 'dangerous' or because of identification with the peer group (i.e. is a schema of peer group solidarity operative?). This could presumably be tested by asking subjects to interact with children who are identified as peers but who are also physically larger. If it can be shown that peer group membership is a dominant affiliative schema then this must presumably be founded on a culture-specific identification of those of the same age as being linked together. That such an expectation is essentially cultural rests on the following reasoning: As children reach significant developmental stages at various ages (e.g. the onset of puberty) these cannot in themselves be unifying; what

is unifying, however, in western cultures is the tendency mainly for educational purposes, to group children of the same age together[1]. That such an imposed grouping may be operative can be drawn, although only by way of analogy, from other social groupings where deliberate steps are taken to group together children of different ages and at different stages of development. An example of this is the initiation procedure of the Samburu tribe in Northern Kenya (communication to the author by an initiated member of the tribe). Boys chosen for initiation may vary in age from eight or nine years to fifteen or sixteen; however, the process of initiation defines them as a warrior grouping which from then on supercedes any numerical age difference. The affiliative expectations which are subsequently made of the group who are initiated together and the physical and psychological stress which the group have experienced communally strengthen the bond. Thus one would expect a spatial response

1. This is usually done irrespective of whether they are developmentally at the same stage; school entry is a good example of this.

which permitted a greater degree of intimacy between the group than with either those older or younger than them (and who therefore belong to other groupings).

It appears that there is very little research to indicate precisely how social distance schemata are taught, although it might be deduced that a process of sensitizing to socially appropriate spatial responses must occur. It appears however from the social schemata research that decisions may be guided by at least two different judgement frameworks. On the one hand the situation may be assessed in relation to injunctions (i.e. social distancing training) about the appropriate course of action in terms of an identification of the individual and that person's social niche. It might be suggested on the other hand, that a judgement may also be made in terms of the potential affective content of the situation, that is, a registration and assessment of positive and negative affect cues. Depending then on the affective content of the situation[1]

1. That is, by the level of arousal evoked.

it is possible that one or other response schema may be employed with possible correction occurring during the course of the interaction should a reappraisal of the situation be necessary. This may possibly explain the discrepancies in response by emotionally disturbed children, whom it is suggested, may well be aware of the social expectation of spatial response but whose actual response may be based primarily on the affective content of the situation.

One of the further problems with the social schemta assumptions is that they have not been related to research into the cognitive growth of the child. Thus while one may accept that children do gradually develop 'social schemas or response sets' which 'function to structure ambiguous situations involving human objects' (Kuethe, 1962a), it is possible in the light of cognitive development research to dispute the conclusions drawn in some studies. An example of this is in regard to Weinstein's (1965) investigation of the social schemata responses of normal and 'emotionally disturbed'

children and the inferences she draws from her results. While the cognitive associative set (i.e. mother + child = a social unit) is not questioned, what is disputed is whether this study actually demonstrates a lack of knowledge of such a set in the emotionally disturbed children. It is possible that these children may indeed have known the socially expected intimacy between mother and child[1] their response, however, may reflect the dominance of an alternative schema. There have been several studies which have been able to demonstrate that situations which are threatening or in which there is the anticipation of negative affective responses produce greater spatial distancing (Little, 1966; Meisels and Doesy, 1971). If that is the case and if one adds to that the fact that Beaken and Mehrabian (1969) found that the intercommunicational networks of families of disturbed adolescents were

1. Their emotional disturbance may in fact have reflected their frustration at their inability to achieve this spatial and emotional closeness.

characterised by more negative attitude communications, then it seems possible that the spatial response in such circumstances may be dominated by a schema based on the habitual affective content of interactions (which are negative, therefore producing a greater spatial distance). In other words it is suggested that several schemata for coping with interpersonal interactions may exist and that the predominance of one or other of these will be determined by the affective state/arousal level of the person making the assessment and the positive and negative effect cues emitted in the situation. Moreover, it follows from this that if a child is constantly exposed to negatively toned interactions which are considered to be spatially repelling, it is likely that subsequent interactions will be coloured by the anticipation of further negative experiences. The atypically large spatial distance then will reflect both the fact that such an assessment has occurred and will indicate at least in some circumstances, the activation of an avoidance mechanism[1].

1. It would indeed be interesting to know how many of Weinstein's group of disturbed children placed themselves as far away from the mother as was possible.

It seems likely, although this has not been verified experimentally, that a child who has just been involved in an altercation with his mother (or her substitute) may express this in a response which is dominated by the negative emotions felt against her. This seems particularly probable, at least up to adolescence, as children are until that age unable to integrate the idea of a person being both good and bad (Livesley and Bromley, 1973). This would then mean conceptually that there are in fact two response schema for mother. The desirable 'good mother' would produce a response seeking spatial closeness, the 'bad mother' would produce a spatial distancing. The assumption made by those dealing with children's responses to social schemata tasks is that for normal children the 'good mother' set is the preponderant one. It does, however, seem likely that normally adjusted children may at times resort to the alternative schema and Weinstein's 40% of normal children who placed peers closer than mothers may reflect this (providing that

the variation can be shown to be independent of age). The distancing then which represents mother and child as separate is not in itself an inadequate or maladjusted response. It is possible, however, that it could become one if it were the exclusive response[1].

It has been suggested here that emotionally disturbed children are disturbed because of the breakdown in emotionally satisfying interactions. If this is correct, why then did these children not sometimes, at least in social schemata exercises, demonstrate their real need by placing themselves closer to the mother figure than is typical? It must be pointed out that the concept of emotional disturbance is a fairly global one and that studies employing it as a differentiating criterion have largely failed to test for variations in the degree of disturbance[2]. As a consequence of this failure to quantify the extent to which a subject's

1. This emphasises the importance of the replication of social schemata tasks to check the stability of responses.
2. This could be done for example in terms of such behavioural indices as amount of eye-contact, communication patterns, etc.

developmentally and socially appropriate spatial behaviour is disrupted or inhibited, it is possible that responses which indicate a process of emotional disturbance may have been missed (that is, that the steps in the process in either direction which may be shown by a close placing of the figures or by variations in a near or far position will not be recovered).

It is considered, however, that where the breakdown in positive affective interactions with parental figures (i.e. with natural parents or parent substitutes) is longstanding, then the child may compensate for this in a variety of ways. One possibility is for the child to cope with the loss of the "good" mother by himself becoming the mother. Where this has occurred[1] the closeness to peers exhibited in social schemata tasks may actually reflect the original mother + child schema (i.e. subject = mother, peer = child). If this were the case then one would expect the distance

1. Behavioural observations would be necessary to substantiate this.

between the child and the peer to be about the same distance as normal children[1] show between themselves and the mother figure. A further strategy for children experiencing interactional breakdown is the denial of their need so that the atypically large distance from the mother figure may be demonstrative of this and therefore reactive (the schema may be known but actively rejected). Alternatively it could reflect the fact that the child is trying to satisfy his needs for emotional and physical closeness through his peers[2], (in this latter situation one may have an alternative use of the basic schema, i.e. subject = child, peer = mother).

If, however, the level of disturbance is not severe or alternatively if the child is beginning to experience situations as satisfying their emotional needs[3], then it seems possible that one may get a period

1. That is, those experiencing positive affective interactions with a mothering person.
2. This was observed by Anna Freud among a group of war orphans, where all the children in the group at times took on the mothering role and at others allowed the others to mother them.
3. This could be through the original care-taking person being helped to adjust his/her interactional patterns or through a substitute parenting person being able to establish an alternative mode of interaction with the child.

when social distances may fluctuate. This may account for the comment made by Ekstein and Caruth (1967), (cited by Tolor and Orange, 1969), 'that disturbed children fluctuate markedly and without apparent predictability in the process of psychological distance'. It does however seem likely that the apparent unpredictability may be indicative of the implementation of a variety of response schemata.

While we lack understanding of the interaction between various schemata, it is possible nevertheless to make some suggestions as to its nature. Social schemata, that is, those schemata which are social injunctions, are essentially global instructions and are unrelated to situation-specific interpersonal interchanges (which may lead to redefinitions of appropriate spacing). The implementation of socio-emotional schemata, however, is directly related to the encounter situation. This is possibly easier to demonstrate by way of an example. Many western cultures imposed the social injunction contained in the children's

rhyme 'my mother said that I never should play with the gypsies in the wood'.[1] Such a social schema, however, was invalidated for the author in a situation of going to the same school as gypsy children and living on a property adjacent to them so that friendship developed. Thus, while for both groups of children the injunction not to play in the woods was upheld, affiliative interpersonal spacing replaced the distancing imperative[2].

So far the discussion of research into children's responses has centred on possible interpersonal determinants of spatial responses. The validity of some of the conclusions reached by the various studies must be questioned unless the actual dominance of the interpersonal variables can be demonstrated, for there has been a growing awareness of the impact of

1. It should be noted in passing that this instruction contains a double taboo both interrelational - keep away from gypsies - and spatial - keep away from the woods.
2. This distancing imperative appears to be related to stereotyping.

environmental determinants on response even in supposedly very 'unthreatening' situations. We shall, however, begin an investigation of such variables by investigating the use of the 'territoriality' concept in relation to children.

The concept of 'territoriality' in children's behaviours has been used almost exclusively as a descriptive term i.e. for children spending time in or exclusively using one particular spatial area. Gellert (1961, cited by Sundstrom and Altman, 1974) has stated that in the study of young children, there is evidence that 'territorial behaviour is very susceptible to temporal changes', presumably meaning that they tend to alter their areas of preferred space fairly rapidly. Paluck and Essser (1971, cited by Edney, 1974) also dealing with young, but mentally-retarded children (up to five years of age), noted that they tended to select a spatial area, which they tried to use again when placed in the same environment twenty months later. Paluck and Esser interpreted the behaviour of their

children in terms of reducing the 'psychological complexity' and enhancing their 'personal control'. Extending their hypothesising then to normal young children, one might presume either that rapid perceptual variations could be coped with by them so that transient spatial occupation in no way threatened their sense of autonomy or alternatively simply that they did not need to use territorial behaviour as a prop for interaction with the particular environment in which they found themselves[1]. If one relates this further to the observations (cited by Rutter, 1972), that normal small children tolerate better the removal of significant care-taking people from their lives (either temporarily or permanently) if they are left in their familiar surroundings, and that small children placed in totally unfamiliar environments with a familiar person will also cope or adjust better, the

1. Moreover their desire for novel stimulation in fact necessitated moving from place to place, as their mode of environmental interaction was based on experiencing new and arousing stimuli.

possible relationship between needing a familiar environment (and therefore using a particular area fairly exclusively) and feeling safe[1] become apparent. Thus it might be postulated that environmentally related spatial behaviours are on a continuum depending on the degree of unfamiliarity of the environment and the level of integration experienced by the individual[2]. It follows from this that one would expect a progression from the exclusive occupation of a particular area when the environment is unfamiliar or when the individual's autonomy is threatened, to a relative freedom of movement (linked with exploratory behaviour), when the individual feels well integrated[3].

Two further research observations would appear to be congruent with the hypothesis just presented. Blood

1. The feeling of being safe arises from the ability to deal with the stimulus content of the situation.
2. Consequently at times of potential loss of control or relaxing of control, such as sleep, defecation, sickness, a familiar place or at least a familiar set of stimuli will be sought.
3. By well integrated is meant that the individual experiences himself as coherent and clearly differentiated from the environment and is able to cope with novel stimuli providing they are within his tolerance threshold.

and Livant (1957) observed that boys under ten years old arranged what they called 'sleeping territories' (i.e. which bed they slept in) when they were at camp (i.e. in unfamiliar surroundings), according to friendship patterns and for protection. This combines the two features of seeking to be near something or someone familiar when in a strange environment and attempting to remove threats when one is in a situation of reduced control (sleep). Esser (1968) also noted that hospitalised children[1] evolved what appeared to be environmental prop behaviours over a six week time span. It seems that as the children began to exhibit territorial behaviours (using a specific area and/or active defence of it), they became what Esser called more dominant. What however Esser named dominance appeared to be rather a gathering of confidence to act out and to express themselves in the area which they had 'claimed', so that they became more assertive and

1. Sickness is reputed to have the effect of threatening one's sense of wholeness or identity.

demanding. In this instance one might reflect on whether the territorial behaviour was in some respects an aspect of regression i.e. whether the need for a spatial dimension to bolster their sense of identity was linked with the experience of themselves as helpless, powerless and vulnerable, in a situation in which they had lost their physical mobility.

Two further studies observing exclusive usage of particular areas of space have again been conducted in environments in which the individual's sense of autonomy and his confidence in himself without environmental props may have been threatened. In both cases the young people were removed from their families and from their familiar environment and the reasons for their removal had presumably underlined their social inadequacy. Thus it is difficult to determine the extent to which their behaviours reflect their attempts to cope in essentially atypical environments, with atypical experiences. This is a particularly significant question as data is lacking to indicate whether there is

any development-related trend in space usage. Esser (1973) observed that institutionalised boys gained status[1] by maintaining an area inside the living unit for their exclusive use. He implied that this 'territorial adaptation' was a process by which the boys gained prestige in the peer hierarchy (although he did not indicate why this should occur). Further as a process there would presumably be stages from low rank/no territory to high rank/territory but this does not necessarily preclude the possibility that if the individual could gain a sense of confidence again, he might reach a phase of no longer needing external space to maintain his influence. It would in fact be interesting to know whether the 9% of time spent in a particular area, was a time spent there because it suited the individual or whether he was required to spend time in the area to maintain his claim[2]. One might suspect,

1. In other words, raised their peer group dominance standing.
2. It would be interesting to know whether failure to occupy an area would lead to a loss of claim and a concomitant loss of prestige.

although again evidence is lacking, that sense of identity and dominance claim can be maintained by other than spatial means (i.e. there might be alternative "props")[1]. While conclusive research is lacking to test these postulates, the field study of Sundstrom and Altman (1974) observing the space use habits in a youth rehabilitation centre cottage, is illuminating. Their study would seem to show that spatial claims may, as suggested, be only part of the process for exerting influence. While those really low in the dominance hierarchy appeared consistently to lack space, intermediates benefitted from high dominance individuals asserting themselves in a different way (e.g. aggressive encounters) to make some area theirs. Their study moreover suggests that different types of spatial areas may be maintained for exclusive usage- dominance areas may be linked with access to desirable amenities and maintenance of control of significant 'pathways', while

1. This was in fact suggested by Lyman and Scott (1965); such alternatives might be distinguishing clothing or marking, e.g. tatoos.

protective domains (identity-reinforcing spatial areas) may be in areas which are defendable and which others will not need to cross habitually. One suspects in both these latter studies that the spatial usage behaviours which were observed were not essentially related to development, except in the loosest sense, but rather reveal identity maintenance and establishment behaviours in situations where role definition is unclear or unacceptable and where prescribed individual rights are not maintained by external agencies (e.g. by adults, supervisors).

If the thesis suggested so far is correct, that children at different stages of development resort to territorial maintenance behaviours to reinforce their sense of integration and identity, then it may be presumed that this aspect of spatial demarcation will be exhibited predominantly at those moments in development when the child feels particularly unsure of himself. These critical phases in psychosocial growth, while undoubtedly in part determined by physiological

changes, will be intensified by changes in the social expectations made of the child, esspecially if that child is unable to meet them. The use of space, however, to substitute for internalised coping mechanisms, may for a child be a partially illusionary one, as actual ownership or possession of space is in most cultures confined to individuals holding adult status. Consequently, not only is the possibility of a child claiming areas for his exclusive use constrained by the claims of more powerful individuals living within the same environment but more importantly, the child can in reality only participate in a sense of possession through identification with the significant care-taking adults around him. While younger children may deal with this territorial impotence by phantasizing possession, e.g. by building small scale houses, by playing games of imaginery ownership, the attainment of concrete thought processes in latency may prohibit this avenue for identity support. This may lead to the assertion of spatial claims in areas which are public, that is,

which do not have individual owners, as suggested by Lyman and Scott (1967). It is in this light that such activities as the construction of tree houses may be understood[1]. It is possible,too, that the emergence of strong peer group affiliations (including gang formation) may be brought about by the lack of territorial autonomy[2]. Of course,it is possible for adults in societies which are territorially oriented to designate certain areas as belonging to the child or to children (e.g.playroom, bedroom, piece of garden, playgrounds), and to respect these areas accordingly (by not entering without permission, by not altering semi-fixed spatial features, etc.).

Nevertheless children and adolescents, it might be suggested, are exceedingly vulnerable spatially, unless their spatial rights are protected and their experiencing of the environment as spatially and socially meaningful is ensured. It may well be, although experimental

1. The air is considered a communally shared space so that off-ground areas may therefore be only partially under the possession of an adult.
2. Interestingly the allocation of a building to a teen-age gang has, it has been reported, often led to a reduction in demonstrative behaviour in the community.

verification is lacking, that children who are exposed to neglect may fail to experience meaningful spatial restrictions, whereas children reared in socially deprived environments may be subjected to the experience of having no space at all.[1] It would be both interesting and worthwhile to investigate this further by, for example, trying to establish whether there are variations in the implementation of territorial support behaviours between boys and girls depending on whether the culture is one in which land ownership is by, and land inheritance is predominantly through, males or females, also by finding out whether parental modes of land tenure (ownership, leasing, renting) affect the spatial 'claim' behaviours of their children.

At this point we shall try and relate the research findings and tentative hypotheses so far with theories of child development, in particular trying to pinpoint

1. This may be the case of large families where even the most basic areas, such as sleeping space, defecating space, are shared with large numbers.

from a theoretical viewpoint transitions in both the comprehension of space and in spatial behaviours in the course of development. This attempt is not without difficulties.

One of the major weaknesses in attempting to relate the spatial implications of developmental theories to actual observed spatial behaviours, is the fact that these theories were primarily deduced from data collected from children brought up in Western societies at least several decades ago (e.g. Erikson, 1956). While developmental theorists would tend to claim that their postulated stages were prerequisites for the normal and healthy development of an individual of any culture at any time, there is still a fundamental lack of knowledge about the way culturally determined child-rearing practices and a child's developmental potential interact. There have been suggestions for example, based mainly however, on anecdotal evidence, that swings in child-rearing practices, even within a single cultural unit, may have far reaching effects on a

child's later mode of interaction with others (and subsequently therefore on his spatial behaviours as affected by this 'personality' variable). Mead, for example, (1930, 1950) tended to assume a direct relationship between early childhood experiences of either frequent tactile interaction and close spatial proximity between family members or rejecting early interactional experiences and isolation in living arrangements of family members, and personality 'types' which were either strongly affiliative, with little sex-role differentiation or aggressivness, showing clearcut sex roles and a marked distrust of others. If these suggestions are correct, then spatial responess in childhood may largely be under the constraint of cultural variables or at least an interaction between development and cultural expectations.

It does, however, despite this observed weakness in the developmental literature, still seem pertinent to try and draw together the understanding of space perception and spatial response in terms of development.

The human infant's primary spatial experiences are from the position of his total dependency. From such a perspective spatial behaviour, as the ability to exercise choice in where one wishes to be in relation to other people and things, has no meaning[1]. It is nevertheless suggested that the experiences of a spatial dimension in early infancy, despite their diffuse nature, may be of fundamental importance in the establishing of later interpersonal spacing. It is probably true, as suggested by the literature on neonatal development, that an infant's initial experiences are of a global nature, that is, they are a cumulative sensation in which the various experiential modalities (auditory, olfactory, visual, etc.) are not separated from each other. Thus the introduction or removal of stimuli in the visual space immediately around the child will evoke varying degrees of arousal which will not

1. It will not have meaning until the infant has achieved some degree of mobility.

be differentiated from other sensations of warm/cold, tactile comfort/discomfort, but will all the same affect the overall feeling of pleasure or displeasure[1]. However, the infant is, it appears, biased in the direction of 'openness' to novel visual stimulation (Friedman and Steven, 1972), so that this fixation on new stimuli as well as the progressive development of visual scanning behaviours are indicative of the potential for the distinctive evolution of a visual-spatial entity which will allow for the eventual recognition and differentiated perception of both human and inhuman objects in both near and far space (Piaget, 1953, 1954). Although space as an abstraction has no meaning in early childhood[2], it is suggested that it does have an interpersonal dimension in that it is equated with the experience of separation. The degree to which postnatal experience is dominated

1. The type of feeling experienced rests preponderantly on the total arousal level being within the child's tolerance threshold.
2. The abstract idea of space is probably not really understood until the acquisition of formal or logical thought.

by exposure to new tactile and auditory stimulation (i.e. discontinuation of familiar stimuli) will be determined by cultural nursing practices; however, acknowledging the variation, interpersonal interaction is at this stage characterised by intermittent reuniting with primal stimuli (the mother's touch, smell, heartbeat). Indeed interaction is first and foremost a tactile reunion and only secondarily a visual recognition. It follows from this, that the acquisition of an interpersonal distance demands the relinquishing of the primary tactile symbiosis.

Once the infant has achieved some degree of mobility he can begin to exert choices in approach behaviours[1]. The toddler's actual moving away from significant others (either mother or family members substituting for her function) may be either self-determined or alternatively be as the result of an injunction from that person. It is essentially, however, a movement

1. Prior to this he was unable to remove himself from unwanted stimuli and could only retreat into sleep or react with fright.

away from someone (or alternatively from a familiar place) and a return to someone. This has been observed in human ethological studies (Leach, in Blurton Jones, 1972), where a significant feature of retarded or regressive development in four and five year olds was characterized by a continual referring-back to their mothers. Moreover in this case the mothers significantly rejected this 'dependency' on them, presumably because they felt it to be age-inappropriate. This suggests then that a new form of spatial behaviour in which children begin to relate "appropriately" to peers, older children and adults occurs. While undoubtedly this transition can in part be explained in terms of the child's ability to 'internalize' the care-taking person, i.e. to reach the stage of intellectual development which can recognise that things and people return and therefore there is tolerance of interactions away from the care-taking person, it may be suggested from this data that the desired behaviour may also be consciously reinforced in some cultures (or at least

undesired behaviour punished or ignored, not however necessarily with the desired result). It is suggested, however, that this earlier mode of spatial interaction which depended on a familiar point of reference and was indicative of the child's still fragile sense of separateness and autonomy[1] may be retained in a variety of symbolic translations in later behaviour. Indeed, it seems feasible that territorial behaviour may be one such transformation of the basic symbiotic relationship[2]. Fisher (1971, in ed. Esser) has also suggested on a more abstract level, that the idea of a 'journey away from',with all the stages and emotions involved in getting to the goal and the return movement ('going home') may be the leit motif of many human enterprises and may mirror the interaction mode in which another individual was pivotal[3].

1. At this stage if a child is frightened he will retreat back to the 'safe' person or area.
2. Interestingly in those cultures which consciously acknowledge a symbiotic relationship with the land, there is often also maintenance of the idea that the earth 'mother' cannot be owned.
3. The metaphysical poet, John Donne's imagery of the pair of compasses expresses the same kind of spatial interdetermination.

There is an additional suggestion, although again one that has not been experimentally verified, which leads one to wonder whether children's spatial behaviours may not be distinctive from that of adults. This is Sommer's comment that children rarely sit opposite each other but prefer the side-by-side position. If Sommer's conclusions about the emotional content of varying seating arrangements can be accepted, then one might conclude that children are more comfortable in a co-operating rather than a competing situation. Alternatively, their seating choice could be seen as indicative of identification (or preference for doing the same thing, with an imitative component and expressive of shared identity). There is, however, a further possibility as this seating choice allows greater physical nearness and tactile contact, but less eye contact; it is possible that it may represent a developmental transition in ways of relationship maintenance. This may be supported by the observation

that autistic children are quite comfortable in a situation of close tactile interaction providing these avoid eye contact. Since it has been pointed out, that from a developmental viewpoint, the tactile interactional mode is the primary one[1], it seems possible to conclude that the side-by-side interaction contains elements of this earlier interpersonal behaviour which relied less heavily on eye-contact.

It is apparent that the understanding of children's spatial behaviours is tantalizingly incomplete. It does, however, seem certain that it is an area in which attempts to integrate developmental research findings with spatial behavioural research in general could be rewarding.

3. vii. A THEORY OF ADOLESCENCE AND A HYPOTHESIS FOR ADOLESCENT SPATIAL BEHAVIOURS.

Thus far the various approaches to spatial behaviours have been delineated, problems in the theorizing

1. It is possible that autistic children may be unableto relinquish this interactional mode.

pinpointed and postulates established, and it is apparent that, while the field is undoubtedly rich in hypotheses, a comprehensive unity (or set of relationships) has not yet been achieved. However, even if the research is still at a stage of intimation rather than confirmation, numerous deductions can nevertheless be made on the basis of the experimental work carried out to date. It may all the same, seem like embarking on a fairly speculative exercise in trying to link together the tentative conclusions drawn from the literature with an understanding of a phase of development, namely adolescence, which is itself far from complete.

That is not to imply that much has not been written about adolescence, but as Rutter et. al. (1976) pointed out the theorizing is by and large unsupported by empirical research findings and may indeed have reached a phase of having engendered several myths. Another aspect of the problem stems from the fact that the concept of adolescence is essentially a cultural

invention[1] and therefore the restrictions imposed upon and expectations made of the adolescent may vary from culture to culture, (Bakan, in ed. Grinder, 1975).

Despite Bakan's (ibid) contention that before the late nineteenth century there was little differentiation between childhood and adulthood, let alone the perception of a period intervening between them, this is considered to be only partially correct. In most primitive societies there was (and still is in some cases) a cultural framework imposed upon the life span of the individual group member. Whether this was simply a division into three phases (babyhood, when the child was physically dependent on its mother; childhood, when it was allocated certain tasks with the group but was not considered to hold full status in the group; adulthood) or whether this was rather a division based on essential experiences[2] the transition

1. As distinct from puberty which is the term for the physiological changes associated with sexual maturation which are pancultural.
2. Examples of these would be circumcision, marriage, fatherhood and circumcision of first son as by the Kikuyu - failure to attain any of these stages meant that the individual remained in the previous grouping.

from one to the other was only very vaguely related to physical maturation. This, indeed, is the fundamental difference between the pre-twentieth century view of the human life span and the present one, for now our rationalisations about the stages of man are linked with the concept of development. However, the developmental rationale in the case of adolescence, while allotting specific social and psychological tasks to this age group, may in fact simply be offering an underpinning to the cultural necessity for a period after childhood and before adulthood. This is not to deny the physiological changes of puberty but is simply suggesting that some of those aspects considered to be most characteristic of adolescence may be the outcome of the social situation in which the young person finds himself rather than related to his physical and psychological maturation.

In many primitive societies the transition from

childhood to adulthood[1] is marked by rituals and ceremonies, which are intended among other things, to symbolise the cessation of one'ssocial state and initiate into a condition of full social participation and the sharing of a cultural identity. While in some social groups the customary acts marking the transition may be relatively short, in others they may be relatively long[2]. In either case, however, there is what Turner (1964) has called a 'transitional or liminal period', which leaves no doubt for either the individual or the group that a change of state and status has taken place. The extent to which the individual may during the transitional ceremonies feel a profound sense of discontinuation and of metamorphosis will undoubtedly be affected by the types of experiences to which he is exposed. Many initiation procedures incorporate such features as ordeals of various kinds

1. This may occur as early as eight or nine or as late as seventeen or eighteen.
2. The Bantu and Chokwe initiation preparation lasts for several months; that of the Gilbert Desert Aboriginies for over a year.

(circumcision, scarification, blood-letting), forms of social isolation (seclusion, journeys alone into the surrounding countryside) and intense communal experiences (such as the revealing of the spiritual 'secrets' of the group), which will all both enhance the profoundness of the experience and strengthen the social bond which is forged at that point.

Nevertheless, if not all initiation ceremonies bring about psychological changes (Herzog, 1970, cited by Brown in ed. Grinder, showed that they did not necessarily alter the self-image of the participants), their real importance lies not in their additional functions[1] but in their clarification of the future role. Indeed, some initiation ceremonies incorporate the teaching of social expectations and the means of fulfilling the role requirements as an integral part of the transitional state. This may include a spatial dimension in that the initiates may learn that adult status brings

1. They had additional functions such as reinforcing the incest taboo and resolving sexual identity conflicts.

with it the spatial avoidance of certain places or people and the right to exclusive usage of other places.

In contrast, in societies which do not have any clear transition from one social status to another (i.e. from child to adult), and which have developed an educational system which has lengthened by legislation the period in which an individual may be dependent on his family, a time period emerges when the individual has attained physical maturity and adult capabilities but not adult status or rights. It is this period which is termed adolescence and, as Sebald (1968) stated, it 'refers to the crisis of status continuity... it is a period in life of a young individual when the status of the child has vanished and the status of the adult is not yet fully achieved'. It has of course been argued by developmentalists that the crisis is part and parcel of the physiological changes which occur with puberty. However, in the light

of findings which suggest that tumultuous or rebellious behaviour after the onset of puberty and during adolescence are not obligatory[1], this may be questioned. Certainly the suggestions may be disputed which imply that adolescence is a period of a greater or lesser degree of emotional disturbance.[2] In view both of the findings of the Isle of Wight survey and Rutter et. al.'s (1976) conclusions from their study that 'adolescent turmoil is a fact....but its psychiatric importance has probably been overestimated in the past', it must be concluded that while adolescents may feel miserable and lonely at times, this is within the range of normal behaviours and possibly attributable to their being in a position of identity crisis (as suggested by Erikson).

Lewin (1952) had proposed that status uncertainty during adolescence led to both hypersensitive and

1. In fact those young people who make the best later adjustment may have experienced a very unremarkable adolescence.
2. This was noted by Bakan, ibid: 'by stressing, for example, the presumptive emotional instability and informed nature of people of that age...Hall and others tended to put a gloss of psychopathology on this age period'.

aggressive responses. Certainly both these response qualities are seen in the various attempts by young people to create something distinctive and meaningful of the years intervening between childhood and adulthood. The twentieth century has been marked by repeated attempts by adolescents from a variety of social class backgrounds to develop a unity and a mystique, starting with the Wandervogel in the early part of the century to the teddy-boys, the beatniks, the skinheads, the hippies and on a smaller scale to gang formations. In some respects these youth movements seem to share some of the same features as initiation procedures (e.g. the wearing of clothing and markings which identify their special position, rituals, the performance of actions, which enhance group cohesion). However, while initiation is a preparatory step of limited duration leading into adulthood, the youth movements of urban-industrial cultures also contain an anti-adult convention component. It appears that they

have evolved from a situation in which the way to attain adult status and adult privileges is unclear[1] and the time required indeterminate. Thus to establish some form of identity (instead of waiting as the initiate does for the new status and identity to be conferred), the young person needs to demonstrate the differences between his status and that of the adult and substantiate its worth[2]. The clearest differentiation can obviously be obtained through adopting the anti-thesis of adult aims and conventions[3].

This latter point of the wide range of individuals still functioning as part of the adolescent sub-culture is undoubtedly related to further education, which means that some young people may lack full adult status well beyond the period considered developmentally to constitute adolescence. This is important as it

1. The existence of these benefits of adulthood may indeed appear illusionary.
2. The surrender of this status may be very difficult if this is achieved.
3. A London based youth movement which contained members of a wide range of ages called itself predictably, the 'counter-culture'.

indicates that it is more than the legislative innovations which have created the phase intervening between childhood and adulthood, as these older individuals could in fact have terminated their education, could be employed and would legally be treated as adults. This of course underlines the difficulty of knowing when one is an adult, for it is not established by any particular social event, except perhaps, rather problematically termination of education. There may indeed be attempts to refuse to become an adult or to redefine what being an adult means.

The thesis just presented would seem to run contrary to the general conclusions which have been noted in the preceding chapter on the way in which spatial behaviours show a gradual transition from the childhood interactional distancing to the socially appropriate adult spatial repertoire. As was pointed out, such a thesis rests on the assumption that spatial behaviours are learned during childhood and from then on are

retained in a relatively immutable form. During the course of the argument thus far this assumption has been challenged on a variety of grounds. In particular, it may be postulated that if the cultural creation of adolescence has left young people in a situation in which neither childhood spatial responses nor adult ones are meaningful, then one might expect the innovation of a spatial response repertoire which is significant for them and attains the goals of identity maintenance and group cohesiveness. This might be expected to proceed along the lines of the use of intimate spacing for in-group members and spatial distancing of varying degrees for those who do not belong or who threaten the distinctiveness of the group. It follows from this that adolescent spatial responses will not be entirely novel but will retain those aspects of the acquired repertoire which support the suggested psychological ends. This may include various aspects of territorial behaviour (mainly of the temporary claim variety). Moreover these and other space-related

responses while appearing innovative, may in fact be reactive. Lyman and Scott (1967) for example pointed out that some of the predominant features of youth culture such as exercising freedom over body territories by special adornment or refusal to wash, and the development of new dance forms, may be compensatory for the absence of free space and therefore have arisen out of the adolescent's spatial vulnerability and lack of property.

It is important at this point to look more closely at what other developmentalists have said about adolescence. Adolescence is said by Piaget to be characterised by an addition to previous thought processes with the attainment of formal or abstract thinking. This enables those who have achieved this mode of thinking among other things to deal with the world in terms of possibilities (what might be and is not). If more recent research (Dulit, 1975, in ed. Grinder) into the Piagetian hypothesis has indicated that the practical demands of modern urban societies may be unconducive

to this mode of thought, so that not all individuals ever acquire it, those young people who have reached it[1], will be able to contemplate alternatives to the frustration which has grown out of the lack of recognition of those areas in which they have already reached mature behaviour. Moreover, if Bakan is correct in postulating that one of the reasons adolescents in the nineteen sixties curbed the expression of their dissatisfaction with their status within society was because they believed they would ultimately gain the promised fulfilment in adulthood[2] then a situation in which the ultimate satisfaction cannot be guaranteed may well bring behavioural changes as well as demands for a re-examination of the concept of adolescence. Should this occur then the change in the concept may bring with it further change in spatial responses.

There appear however, to be some spatial changes

1. It will frequently be those of course who have extended their education and thus are caught for some considerable time in the status crisis previously referred to.
2. This could be questioned anyway on the basis of the violence at that time between students and police in many countries.

which may be explained in terms of development. It has been pointed out that adolescence may be characterized by 'a return to bodily contact as a means of establishing, sustaining and enjoying social relationships' (Argyle, 1975). This would indeed seem to fit in with the research findings already indicated which suggest a change in spatial behaviours in the direction of decreased distancing in opposite-sexed pairings. Argyle suggested, moreover, that the adolescent mode of tactility and spatial intimacy was related to sexuality rather than to the infant-parent tactile relationship. Jourard had already concluded this on the basis of his own research findings in 1971: 'The fact that the greatest amount of physical contact occurs in the subjects' relationships with opposite sex friends attests to the equation of physical contact with sexuality in a culture'. The attainment of this spatial and physical closeness may however, it is postulated, in some instances serve other ends. It may

on the one hand be an attempt by those who have experienced emotional deprivation in childhood to gain what might be called 'comfort contact' in a socially acceptable manner (i.e. under the guise of sexuality; Hollender, Luborsky and Scaramella, 1969; Hollender, 1970). It may on the other be an aspect of affiliation, in that increased tactility among adolescents may strengthen and demonstrate the special bond between them. This presumably might lead to tactile interaction with members of either sex, but not it is suggested, without a certain risk of gender confusion and the creation of doubts about one's identity. It is suspected that the concepts of brotherhood or sisterhood may at least in the period directly after puberty be anxiety provoking, particularly as the direction of sexual impulses is not yet firmly set. Thus, while the social evolution of adolescence is not questioned, it is possible that in terms of spatial response other factors may also be operative. These will now be considered.

Although so far the cultural creation of adolescence

has been stressed, there are undoubtedly certain developmental tasks which must be completed after the onset of puberty and which may have spatial implications. The attainment of sexual maturity brings with it hormonal changes which on an emotional level are experienced initially as a sense of affective unpredictability. Until the young person has learned the dimension and limits of both his sexual and aggressive impulses, he may react both to adults (against whom he may feel a certain animosity) and to the oppostie sex, circumspectly. Indeed, particularly where ambivalence is felt and a concomitant anxiety about the extent to which one is able to control one's emotional responses, reaction formation may lead to exaggerated spatial distancing. If the period known as adolescence involves generally an establishment of an independent identity, it requires pre-eminently a working through of one's sexual identity as a male or a female. This, however, is extremely dependent on the way in which one has resolved previous developmental tasks,

as well as being complicated by atypical physical features, early or late onset of puberty and familial experiences (membership of an intact or separated family, solo parentage due to death, divorce, etc.). From this may be deduced that while the trend towards relationships with and spatial nearness to the opposite sex may be expected in the years following puberty, this may not occur immediately. The general lack of detailed spatial research for the adolescent period through to early adulthood had led to the formulation of very general expectations which may in the light of more detailed research prove invalid. The kind of variations which might be expected can nevertheless be postulated. After the onset of the physiological changes associated with puberty, the young person may go through an initial phase of tending to isolate himself or herself spatially from other individuals, although there may be some remnant of the typical later latency spatial interaction mode which is characterized by closeness to one's own sex. In

females indeed this may never be totally relinquished. The social censoring of the continuation of this exclusive spatial preference[1], however, in most cases results in a period of general uncertainty in spatial interactions and subsequently by the adoption of culturally accepted and preferred pattern of increasing intimacy between opposite sexed individuals. It is nevertheless thought that these culturally expected changes in spatial behaviour may be affected and modified by spatial parameters emerging from within the peer group, particularly where variations in sex role expectations may be occurring[2].

1. By its labelling as demonstrating homosexual tendencies.
2. There may be an active rejection of the male-female = a couple = spatial intimacy set.

'It has been said that, in its haste to step into the twentieth century and to become a respectable science, psychology skipped the preliminary descriptive stage that other natural sciences had gone through, and so was soon losing touch with natural phenomena'. Tinbergen, 'On aims and methods of ethology', 1963.

4. METHOLOGY

4.i. HYPOTHESIS ON WHICH THE PRESENT RESEARCH IS BASED

If Tinbergen's criticism is not without a certain validity in regard to the general body of research into human spatial behaviours, this piece of research attempts in a small measure to refute it. This has not led, however, to the adoption of a pure ethological method. Certainly observations in the natural environment have formed a composite part of the research and the principle of replication has been applied (albeit

to only a limited degree). An exclusively ethological approach was rejected because it appears from the body of research into human spatial behaviours so far gathered (despite all their inadequacies and the criticisms made of them), that they are not simply responses of an invariable kind to triggering stimuli but are affected by a reflective instance and a cognitive assessment. This is not to underestimate the importance of and necessity for data collection and collation of as detailed[1] and comprehensive[2] a kind as can be achieved using the tools provided by modern technology. It does mean, however, that a different spectrum of fundamental questions is being asked. The ethologist seeks to identify those components in the total field of environmental stimuli which evoke specific, replicable responses. In contrast, much of the research into non-verbal behaviours documented so far

1. That is covering all concomitant non-verbal responses.
2. By comprehensive is meant recorded in a wide range of natural environments and with differing subject populations.

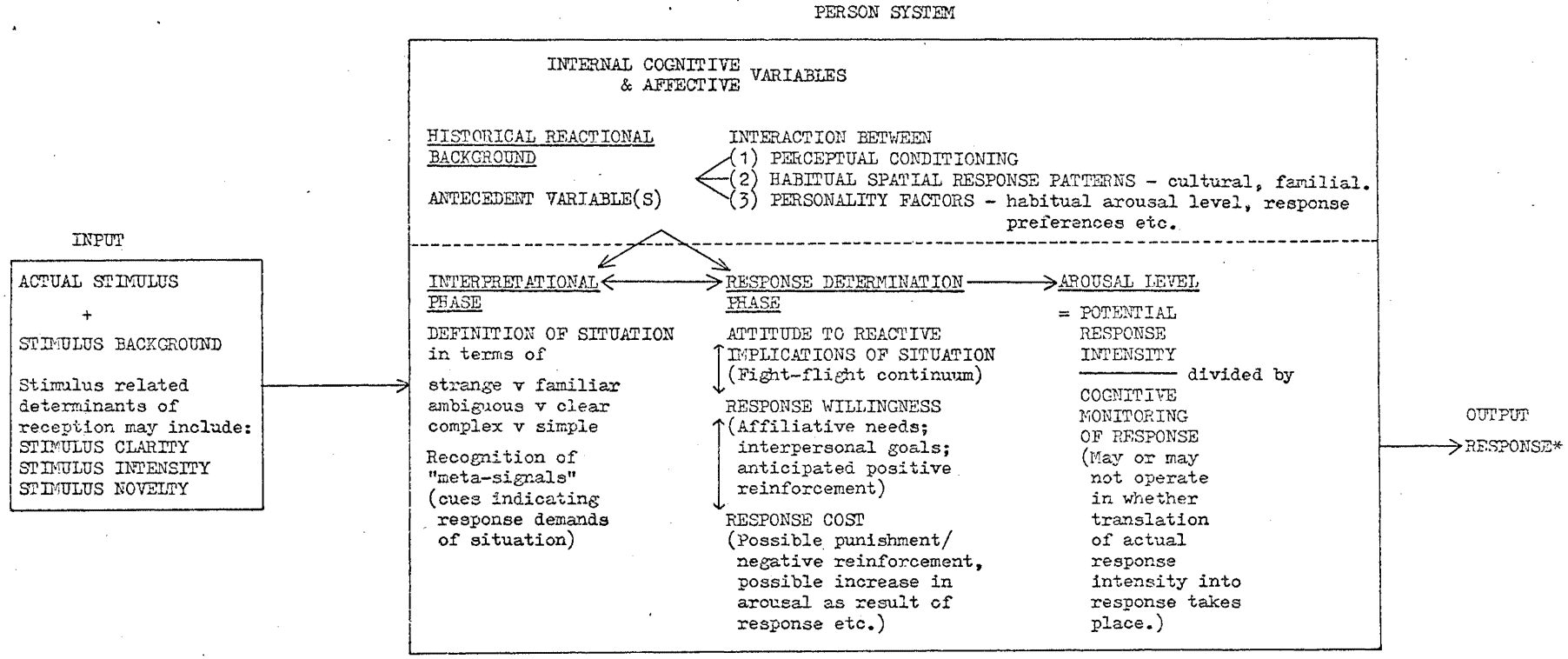
has hinged on establishing either what particular non-verbal responses mean to the individual performing them or how they are understood by those observing them. The approach adopted in this research in some respects combines both these approaches, in another is an alternative to them. It has already been intimated in the discussion of the methodological and conceptual difficulties and will now be outlined in more detail. It is considered that recording only those environmental variables assumed to be operating[1], or monitoring only the responses made, will not necessarily provide a meaningful body of data from which to develop interpretations. If the assumption already formulated, namely that the human individual does not simply respond according to a simple stimulus response paradigm, then research needs to include an investigation of the intervening process[2], as well as an identification of the

1. There is the perennial problem of how these are perceived by the individual, how his own perceptual training in the culturally specific perceptual mode will determine which stimuli will be accorded attention and recognition.
2. That is an investigation of the factors influencing perception, interpretation and response determination.

environmental variables and the recording of the responses made. This means more specifically in terms of spatial behaviours that in the first place the total spatial context needs to be understood[1]. These variables once identified as completely as possible, need to be held constant. This cannot of course in a replication situation alter the change from a novel spatial configuration to a known one; nor does it remove the possibility of these constant variables being perceived differentially by different cultural groups. The relationship between the actual stimuli[2] and the perceptual process, which selects and differentially directs attention to the stimuli, leads on to a consideration of the intraorganismic influences which are operative, (these are charted in Diagram 1, on the following page).

While it is thought that the individual is initially

1. This means not only in terms of the intermediate spatial surroundings but also in terms of population density within the selected environment and as regards such factors as stability of the spatial situation.
2. Together with the stimulus background which includes high intensity, noise level, temperature, etc.



*RESPONSE

THEORY 1 : Each potential response channel will convey the same response (and response intensity constant within each response channel) - cumulative/integrated response.

THEORY 2 : The response will be shown differentially across response channels i.e. may be expressed only in one modality or may be "sub-divided", so that with replication of original experience a differing response may only be indicative of changed mode of response.

THEORY 3 : A "symbolic" response which does not appear to be a response to input stimuli may occur. It is indicative of an intraorganismic 'translation' of the internalized response into a non-interpretable reaction (has only personal meaning).

DIAGRAM 1 : HYPOTHESIS OF INTRACRGANISMIC FACTORS DETERMINING SPATIAL RESPONSE

involved in comprehending the situation in terms of establishing a relationship between those stimuli accorded attention[1], it is considered that what has been called the 'historical reactional background' may also influence this interpretational phase.

While it has been acknowledged that the development of a set of spatial responses is established over time, it has rarely if ever, been asked how a person's previous spatial experiences have affected his habitaul spatial response pattern. Part of the reason undoubtedly for not inquiring about this rests on the assumption that in any particular culture all individuals are learning the same set of interactional or other distancing responses. However, in the light of the research to date, it can no longer be assumed that this is so. It is therefore important to ask about a person's spatial history. This, it is suggested, should

1. Following Gestalt principles such as relatedness/groupings. This recognition and analysis may be more difficult and more arousing in a complex, strange or ambiguous environment.

include the degree of population density to which the individual has been accustomed, family size[1] and the amount of mobility to which an individual has been exposed. Personality factors are also grouped with the 'historical' antecedent variables, although it is with the belief that personality is the product of an interaction between environmental influence and the innate potential. The latter is considered to be essentially non-directional but may influence distancing preferences by the individual's possible arousal level[2]. The learned social schemata are thought to be a component of and determinant of the habitual spatial response patterns, although the degree to which they are operative as already suggested, may be constrained by personality variables and by whether the individual has actually been exposed to them.

1. This will, if related to such factors as whether the individual has been permitted to have an area of his own within the living space, indicate the type of density to which the individual is accustomed in his intimate space.
2. This arousal level is not solely a potential except in its range, i.e. intensity limits, and possibly in its tolerance threshold.

The research surveyed in the preceding section would seem to indicate that there is a further stage in the process of making a decision about a spatial response (this is called the 'response determination phase' in the diagram). This involves an assessment of the situation in terms of its response demands, the subject's response willingness and the response cost. If the total spatial situation evokes an arousal level which is above the tolerance threshold of the individual and in which the assessed response cost is high, then the individual may be expected to dispense with normal cognitive response models and react according to an emergency schema based on a fight-flight continuum[1]. Normally, however, the response choice will be governed by a balancing of the positively reinforcing aspects of the situation with the possible response cost involved. The potential response intensity may or may

1. The point at which the individual is assessing whether to disregard social convention, i.e. social schemata, and when the arousal is equal to his tolerance threshold may be the moment when a freeze reaction, comparable with the ethologists' critical distance concept, is reported.

not, however, be the sum total of the intra-organismic process so far described. It is feasible that at this point, now that the subject has made a decision, a cognitive monitoring may still occur which may alter the response intensity actually internally experienced (i.e. the covert response) in the direction of what is situationally appropriate[1].

If so far we appear to have presented an array of internal variables which may govern the overt response and thereby seem to have multiplied the difficulties for understanding spatial behaviours, this may not be quite as formidable as it appears at face value. It seems possible (although only at the hypothetical construct level), that not only is there congruence among the total field of responses both verbal and non-verbal but that each individual response modality, in as far as it is bound by ideas[2], may be congruent within

1. Intense affiliative or hostile spatial inclinations may be prevented by the subject's self-awareness and self-control.
2. Irrespective of whether these are iconic or related to linguistic concepts.

itself. In other words the assumption of a structural unity is made so that having gathered together the data from the three areas outlined (i.e. environmental stimuli, intraorganismic variables and response) one may be able on the basis of congruity to determine the relationship between them.

While, however, a structural approach is adopted, it is a structuralism with a difference, as follows: the structure which is sought is not one based on a dynamic balance and interplay between various non-verbal response possibilities, but rather the cognitive and affective structure built around the concept of space. It was felt that this was an important area for an extension of spatial theory as it might provide the link between the discrepancies noted between paper-and-pencil measures intended to evoke social schemata and overt spatial responses. In other words it was postulated that an individual's attitudes about and responses to a spatial dimension would be congruent, and that the logic and internal consistency would be governed by the

total rational configuration implicated in the idea of space and other space-related concepts[1]. Moreover this was further related to an important postulate attributed to Piaget that 'there is no structure which lacks a genesis'. This led on to the hypothesis that the individual's ideas about space can be related to his past spatial experiences as well as to his current spatial environment and his stage of development.

The hypothesis formulated is not without certain difficulties. One might assume on the basis of a shared set of linguistic expressions and as a consequence of the dimensions and limits of human imagination and creativity, that each individual would develop, at least within one culture, a comparable vision and a similar structuring of space. This does not preclude however, the possibility (at least potentially) that some individuals may develop a set of constructs for determining spatial behaviours, which are meaningful to

1. Such concepts as ownership, privacy and vulnerability.

them and represent a conceptual unity, but which may be distinctive from both the cognitive schemata and reactional spatial mode of the community at large. This may operate particularly in situations where individuals have never been taught a consistent set of spatial responses or where the particular culture no longer has a set of meaningful interactional distances. It follows from this that while that divergent spatial response pattern may be important in terms of alternative conceptual structures and their possible relationship with original cognitive modes[1] of coping with environmental contingencies, it raises the question of the relevance of statistical procedures to the data. They do of course have a place in establishing whether there is significant variation between responses of different cultural groups and whether a statistical relationship exists between variables which appear to be affecting the overt spatial response. What they cannot guarantee

1. The place of intuitive thinking and of spatial structuring which includes a fourth dimension are of particular interest in this context.

is the process by which the individual decides on the response. Unlike many previous studies which have assumed that an atypical response is 'wrong' (i.e. the individual has not learned the appropriate social schema), the assumption of this research is that an apparently deviant response means that the individual is coping with the situation according to a different internal conceptual framework. It follows too that there are no chance responses, although the individual may in some situations fail to respond at all (spatial immobility). He is nevertheless in a constant state of spatial adjustment[1] to both the spatial environment and to the presence of other people.

On the basis then of the conceptual model outlined the aim of this study was to attempt to weld together some of the best aspects of the research into spatial behaviours carried out to date. This meant devising a study which first combined observation of behaviour

1. No motion is also a spatial adjustment.

within the natural environment, rather than in a totally experimental setting, with an attempt to relate the observed spatial responses to the history of space usage of the individual and to the individual's concept of space. Secondly one which made a comparison between different cultural groups within a commonly shared environment. From such an approach it was hoped to be able to gain a greater comprehension of the way in which the individual builds up attitudes about his spatial needs and to try to establish the nature of the relationship between these and his overt spatial behaviours.

The group of female adolescents who were selected for the study met at least some of the criteria required to fulfil the aims which have just been set out. The major criticism of the chosen group would be their residence in a natural environment of a kind but one which was neither their habitual spatial environment nor one which they could own[1] nor one in which they were

1. Except in a temporary way. Adolescents are of course normally in this situation.

likely to remain longer than a year or two[1]. A further problem was the relatively small number of adolescents within the community.

In some respects the absence of detailed research into the developmental aspects of spatial responses prior to and during adolescence should perhaps have biased the experimental design in the direction of observation and data collation, but for the reasons already given this was not the approach adopted. It is certainly true that for all ages substantial empirical verification of the spatial hypotheses assumed are lacking. It does nevertheless seem valid to study what is happening spatially at any point in the life cycle and try and see how this relates to what has gone before, how this fits together with the particular phase of development reached and perhaps most significantly to explore the way in which the individual has constructed ideas around and attitudes

1. They did, however, have some voice in timing their departure so this may not be too significant.

about the space concept.

Having looked at the difficulties of studying a community of female adolescents in an atypical environment, the advantages will now be cited. The adolescents lived within an environment in which the physical restraints on mobility were known, one in which, at least ideally, identical social demands were being made of all group members by the adults in the community, and in which the dynamics of peer-group interaction, in as far as these can affectively be measured by sociometric means, could be ascertained. Furthermore a considerable body of data was already available about various factors which it was thought might influence spatial attitudes and spatial behaviours (personality factors as established by psychological assessment, intelligence quotient, family background, number of siblings, etc.). A further at least partially advantageous factor was that the experimenter was a familiar member of this community and, while it was possible that the adolescents might respond to her differentially, this could be controlled for within the

experimental design.

The most appealing aspect of the adolescent community chosen was that it consisted predominantly of two racial groups whose responses to a common environment could be compared. This was particularly important as the premises on which the research carried out was based made the employment of a control group who existed within a different set of spatial and interactional contingencies unacceptable. Of course it would have been possible to place a control group in the same experimental situation. However, the experimental situation, since it was also an integral part of the natural environment of the community of adolescents selected for study, would not have the same valency for the other group[1]. While it is admitted that we do not yet know which factors are constant determinants of spatial response and which only affect the response

1. It would not have the same designation of 'neutral shared area within our grounds', even if one had been able to familiarise them with it; it would also stand in a different spatial relationship, on a near-far continuum, to their current 'home base'.

under certain sets of conditions[1] it was decided that this study should deal exclusively with the female adolescents within the residential community. In place of a control group the small number of adolescents who were first generation part Maori (that is, one parent was European and the other Maori) were utilized to provide a comparison to the response mean of the pure racial groups. Although the spatial attitudes and responses of other adolescents in the community who belonged to other racial groups[1] were also recorded, these were only included in the results where the overall response pattern for female adolescents was considered.

It might be argued that since the adolescents live within an atypical environment their behaviours and attitudes may only reflect adjustments to the peculiar contingencies with which they must exist. While this cannot be refuted until data is available from other adolescent groups, there is at least some

1. It is possible that an external control group may have shown the same response patterns.
2. Islander, Maori-Islander, European-Islander, Chinese.

reason to think that this might not be the case.

From a study carried out by the author (1971) comparing the attitudes of institutionalized adolescents and those in the community (in Switzerland) to the police force and law enforcement, it was found that the former group certainly felt themselves to belong to an adolescent peer group, despite their social isolation from them, and their attitudes were commonly shared ones showing no significant variation from those of other adolescents[1]. This leads one to postulate that, at least in terms of attitudes, the adolescents in this study, who share many of the same emotional difficulties as their Swiss counterparts[2], may reflect attitudes which are common to other New Zealand females of their age. It was hoped to determine from the research carried out whether the responses demonstrated were related to

1. This was so despite their distinctive and frequently rather negative experiences with the police.
2. They would be diagnosed similarly, have been through similar kinds of 'initiatory' experiences which have separated them from their peers and from their families.

the attitudes held or whether they were more directly the reaction to the spatial contingencies of the community itself.

4.ii. SUBJECT POPULATION

The subjects of this study were all living in a residential school for girls with special problems (emotionally disturbed) run by the Social Welfare Department at Kingslea in Christchurch. They ranged in age from 14 - 16 years and the proportion of Maori to Pakeha adolescents was in a ratio of 1 : 1[1]. While the acting-out aspects of these young people's behaviour prior to admission to the institution showed some variation (ranging from anti-social and aggressive behaviour to habitual absconding, promiscuity, depressive withdrawal and suicide attempts), the common denominator, in as far as there can be one, appeared to be that they came from families where interaction between child and

1.In this respect then atypical of the community as a whole.

adult had become severely strained or was malfunctioning. Nearly all girls were State wards and had reached that status after a N.U.P.C. charge had been brought against their parents[1]. A few girls in the sample were in Social Welfare care as a result of their parent(s) taking out a Section 11 Agreement with the department[2]. All girls had been in some other form of care prior to admission to the long term residential school[3]. The length of time that the girls had lived away from their own families varied quite considerably.

Both Maori and Pakeha girls seemed in the main to have gone through a similar pattern of disrupted development, starting with school difficulties and truanting, moving on to staying out at night and running away from home. For the majority this had meant the establishment of fairly unstable sexual relationships; for some it had also meant engagement in

1. The parents had had to admit that they were no longer able to control their child.
2. They had asked for the department's help in controlling their child.
3. Psychiatric clinics, girls' homes, family homes, foster homes, education department residential schools.

criminal activities. The girls ranged in intelligence from dull average to superior. No girl fell into the truly subnormal range, although some pseudo-retardation was recorded, and there tended to be a predominance of girls who tested out in the good average to above average range.[1] Although many had been labelled as 'personality disorders', none were considered psychotic and none showed clear-cut neuroses. The diagnosis 'personality disorder' appeared to be used to cover a wide range of behavioural items (neurotic, depressive schizoid, psychopathic features) which might be described as part and parcel of a disrupted emotional development.

The girls involved in this study were all non-voluntary residents, although the degree of resistance they had felt towards their admission to the institution had varied (mainly according to the degree of preparation beforehand). Some had felt quite positive

1. This is atypical of most residential communities of this kind.

about it - usually because they had academic goals which they were unable to meet in the normal school environment. Others felt rejected and betrayed by their parents or by adults in general. Some had even tried to avoid being sent by running away. The extent then to which the adolescents felt that they had been moved about by adults against their will varied, although nearly all went through an initial period of some hostility towards the new environment. Many experienced considerable homesickness in the first few weeks. Both these emotional reactions appeared to be an integral part of their adjustment.

4.iii. NATURE OF THE SPATIAL ENVIRONMENT OF THE ADOLESCENTS

The girls live on a property of twentyseven acres which is open on two sides, fenced on one and hedged on the other. As, however, the main entrance area and front of the property are on one of the open sides, it is immediately apparent to the adolescents that the

other boundaries are markers and are not intended to contain (they can in any case be climbed over). Despite the openness of the spatial environment, however, the main activities in the daily lives of the adolescents occur within the residential community (e.g. schooling, recreation). This is not to say that they do not at times leave the property both in the company of adults and on their own (for shopping, sports activities, outings, home visits etc.) but that there is a prohibition against leaving the grounds without permission. Consequently, while the adolescents are not directly isolated from the community at large, they are in some respects socially isolated in that their main relationships and predominant social reinforcements will be from within the residential community.

The impact of the community and its spatial dimension may, it was thought, be experienced differentially. The extent to which a girl may be dependent on the allotted role definition and the various other peer and adult pressures within the institution may be governed by her distance from her family and relations and the

amount of contact (phone, letter, visits) which is maintained by them. If she is a girl with local contacts or if her family and friends keep up a constant interchange with her, then she may be able to retain a sense of a continuing identity and a realization that she enacts more roles than those permitted by or forced upon her by the institution environment. This has a spatial dimension for since the girls came from all over New Zealand, their sense of isolation may increase with an awareness of the physical distance between themselves and their homes. Thus those girls who live at greater distances may conceivably show variations in spatial response which relate to this factor. This could possibly mean either that these girls might feel more spatially constricted because of the anxiety of being so far removed from a familiar spatial environment, and might seek to cope with this by more affiliative/dependent spatial configurations. Alternatively they might as a result of their superior awareness of spatial distance, feel emboldened by their distancing

experiences[1]. However, this may further be related to the adolescent's history of spatial mobility, as the anxiety and tension of having to move from one place to another may be affected both by the familiarity of the experience and by frustration created by a repeated severing of social bonds.

Despite the possible variations indicated above, the community's spatial environment is designated by varying degrees of spatial freedom which are at least in terms of intention, the same for all girls. Each adolescent has a bedroom of her own which is hers for as long as she is resident in the institution[2]. She is allowed to personalize this area (with her own ornaments, pictures, placing of furniture, etc.) and both other girls and adults are discouraged from entering that area without the occupier's permission. With the allocation of a bedroom, membership of one of

1. This could lead to enhanced spatial exploration showing itself in ease of movement, flexibility in interactional spacing and possibly more attempts/temptation to leave the property unauthorised.
2. Unless she moves to one of the flats on the property when she is given another.

the three open living units is also allocated. This means spatially that the girl may enter her own living unit at any time[1] but she may only enter the other living units when granted permission. The areas immediately around the living units also tend to be regarded as belonging to the units but they do not generally carry a spatial prohibition. The rest of the grounds are areas of free movement, although areas such as the school buildings, the gymnasium and hall may only be entered during school hours or with permission outside these hours. The administration building, while consisting mainly of rooms which can only be entered by invitation, also contains an area which is a free area at all times[2].

The administration building contains further a conference/common room which is shared by both girls and staff. It is a staff room by virtue of being the area in which morning and afternoon teas are served. It

1. It is equated with the home base.
2. It implies, however, by the approach to staff offices the wish to see someone.

is an adolescent's area in that it houses the coloured television which the girls saved up for and which they may watch in the evenings. It is also used as an area for discussions with groups of visitors (in which both girls and adults may at times participate). It was this room which was selected as the area for carrying out the major portion of the experimental work as, because of the temporal sharing of the room, it appeared to offer the most neutral area within the community - one which might be considered to be shared by all and belonging to none. Although clearly the familiarity of the room would be determined by length of stay[1], all girls had previously entered the room and the associations with the room were considered to be positive ones in that they had only ever gone there by choice.

As research carried out by Sundstrom and Altman (1974) has indicated that adolescents living in

1. This would govern the number of times the girl would have previously used the room.

residential communities may show changing patterns in spatial (territorial) behaviours, the tasks carried out in the selected experimental area were repeated. In the intervening period the girls involved in the various measures had been for two weeks' home leave between the school terms. It was considered possible that the readjustment to the home spatial situation[1] and then the further readjustment to the residential community might lead to alterations in observed spacing. An additional factor which must also be considered is that the desire to leave the residential community varied and changed over time (with some girls anxious not to have to leave, others settling in, others preparing for discharge). This may be of importance because of Edney's suggestion that future anticipated space usage may affect spatial responses.

1. Both in terms of actual space available to family members and in interactional spacing.

Those preparing or intending to leave the institution environment might conceivably demonstrate behaviours indicating a 'disengagement' with the spatial areas, although it was felt these might be the least pronounced in the neutral area selected.

The institution is set in a residential suburb and might for some of the adolescents represent an area containing a different density of population from their home environment. The population of the property itself is a fluctuating one with adolescent residents numbering at different times between 40 and 65[1]. While the total adult staff numbers 60, as few as ten and as many as about 40 may be present at any one time on the property. As the experimental procedure was carried out at a weekend slightly more than the smallest number of adults were present at the time (the number fluctuated from 10 in the morning to 20 in the 'cross-over' period between morning and afternoon staff).

1. Admissions and discharges, while usually occurring at the beginning or end of school terms, may also occur at other times.

As the adults within the community tend to take on the role of surrogate parents, there is arelatively high level of tactile interaction between staff (both male and female) and girls. This generally takes the form of putting an arm around or linking arms when moving around the property, but may also include cuddling, kissing at bedtime and comfort contact when an adolescent is upset. While the adolescents are allowed many of the same tactile freedoms amongst themselves, more sexually-toned contacts are frowned upon or actively discouraged[1]. All forms of physical punishment or physical expression of aggression are forbidden to both staff and girls.

4.iv. PILOT STUDIES

The pilot studies were of a somewhat exploratory nature as what was sought was a series of experimental

1. Girls are not allowed to get into bed with each other or go into each other's showers.

procedures which would record as far as possible the normal spatial behaviours of the subjects as well as gather the necessary data to elucidate such related areas as spatial attitudes and tactility. The decision to adopt a combinative approach resulted as explained from the awareness of the inadequacies of many of the previous attempts to gather spatial data which have already been noted. The initial findings, however, were disheartening and led to a more modest final research design. The various pilot procedures nevertheless appear worthy of consideration as they are in their own way the explanation of the methodology which eventually evolved. If the original conceptions appear rather megalomanic, they are undoubtedly evidence of the naivety of the experimenter at that stage. That is not to say that what was sought, namely a composite picture of the interrelationship between adolescent spatial behaviours and other non-verbal behaviours, is completely unattainable but that much experimental work is still needed to achieve this

goal.

It is not without a certain degree of embarrassment that the experimenter admits to having hoped to achieve a basic framework of adolescent non-verbal spatial and tactile behaviours from video-taped encoding tasks and decoding procedures. Such an approach might have proved viable had not the assumption that the non-verbal behavioural repertoire might proceed largely out of awareness been rapidly shattered by the high level of self-consciousness and the reticence demonstrated by the subjects in the pilot studies. This was particularly evident once the film camera and senior technician were present for the subjects' 'on-stage' behaviour collapsed each time they heard the word 'cut'. By saying the word while filming actually continued, a sequence of relaxed,'normal' behaviour was recorded before the subject became more highly conscious again. (Such a trick could not be performed more than once.) If the non-verbal spatial behaviours, gestures and tactile contacts were certainly present and varied in

the waiting room situation (Pilot Study 1: subjects entered the room which was set out with chairs in a U shape open towards the one-way screen (they were told on entry whom they were to imagine was also present on the marked chair at the far end of the U), the encoded non-verbal behaviours were in the main incomprehensible to the untrained adolescent observers except in the case of the responses to an imaginery child. The ones which seem to have allowed this particular interaction to be recognised were those which conveyed the height of the imaginary person and the frequency of tactile interaction (e.g. patting, putting their arm round the child to comfort it). A possible further indicator for observers was the fact that the subjects in this pilot study went and sat next to the child immediately or moved to sit next to it within a minute or two. Despite the probability that some modelling between subjects occurred in this trial procedure as the same subjects were used as encoders and decoders, there was, as can be seen in Diagram 2, some variation

TABLE 1: SPATIAL VARIATION AND OTHER NON-VERBAL BEHAVIOURS IN PILOT STUDY 1.

Imaginary Person	SUBJECT K MAORI	SUBJECT C EURO.	SUBJECT V EURO.	SUBJECT ADULT FEMALE EUR
CHILD	TALKS TO IT. LEANS TOWARDS IT. BENDS OVER, STROKES. (CHAIR 3→1).	PATS CHILD, LEANS OVER, ARM ON BACK OF CHILD'S CHAIR, STROKES HAIR (CHAIR 1).	SITS NEXT TO CHILD (CHAIR 1) BEGINS TO TALK, OWN HANDS TOGETHER, TOUCHES CHILD.	GIVES CHILD LOLLIE, SHOWS IT MAGAZINE, TAPS IT ON K... TELLS IT TO BE QUIET. SHAKES FINGER (CHAIR 1).
TEENAGE GIRL	SCRATCHES HEAD. SHUFFLES. BEGINS TO TALK. SHAKES HEAD. HAND CLENCHED TO MOUTH (CHAIR 3).	CHAIR 2→1, SMOKES CIGARETTE. CHANGES CIGARETTE FROM HAND TO HAND. NODS.	SITS IN CHAIR 3, FOLDS LEG, LEANS FORWARD. CHECKS WATCH, ARMS RELAXED.	SITS ON EDGE OF CHAIR, ELBOWS ON KNEES, OFFERS CIGARETTE, PUTS ON LIPSTICK, TOUCHES OWN HAIR. (CHAIR 3).
YOUNG MAN	LOOKS DOWN. HIDES FACE. LOOKS AROUND, AVOIDING DIRECTION WHICH WOULD GIVE E.C. SCRATCHES. (CHAIR 3).	INITIALLY SITS CHAIR 5. LOOKS AWAY, THEN AT CEILING, MOVES TO CHAIR 1. (REQUEST FOR SOMETHING). GOES THROUGH BAG. HOLDS HANDS WITH YOUNG MAN. LOOKS DOWN	HESITANCY RE CHAIR, SITS IN CHAIR 4. LOOKS AWAY. GIGGLES. HIDES FACE, STROKES HAIR.	SITS CHAIR 2, STRETCHES OUT. FOLDS ARMS. SMOKES. OFFERS CIGARETTE. THUMBS UP SIGN. SHAKES & TOUCHES HAIR. HAND ON FACE.
MIDDLE-AGE MAN	BEGINS TALKING IMMEDIATELY. FROM CHAIR 2. (KEEPS FACE TURNED AWAY FROM MIRROR). LOOKS AT WATCH. LEANS FORWARD. SHRUGS.	SITS CHAIR 3. LOOKS AT WATCH. READS, QUIETLY FLICKING OVER PAGES. SHRUGS.	SITS INITIALLY CHAIR 4, MOVES TO CHAIR 2 TO SPEAK. SHAKES HEAD. SMILES.	SITS CHAIR 2. NODS. CHECKS WATCH. NODS MORE SLOWLY. TAPS FOOT. NODS VIGOROUSLY. SHAKES HEAD.
OLD WOMAN	GOES TO CHAIR 2. BEGINS TO TALK. LEANS FORWARD. SHAKES HEAD. SCRATCHES EYE SEVERAL TIMES.	GOES TO CHAIR 1, BEGINS TALKING IMMEDIATELY. GIVES MAGAZINE. RELAXED POSITION. HANDS IN LAP, SHRUGS.	SHAKE HANDS WITH OLD WOMAN. SITS CHAIR 1. CROSSES LEG. HANDS IN LAP. CONVERSATION. TUTTS.	SITS IN CHAIR 2. STARTS TO READ. OFFERS MAGAZINE. FOLDS HANDS. LIGHTS CIGARETTE. LEANS WELL BACK IN CHAIR. HOLDS EAR.
OLD MAN	CHAIR 2. BEGINS TO TALK. ROCKS SLIGHTLY, LOOKS AT WATCH. LEANS FORWARD.	SITS CHAIR 2, GREETS THEN SITS LOOKING DOWNWARDS. DOES NOT SPEAK FURTHER.	WALKS OUTSIDE CHAIRS. SITS NEXT TO HIM THEN MOVES AWAY (CHAIR 1 → 2). READS. CHECKS WATCH. DOES NOT SPEAK.	SITS CHAIR 3. MOVES TO CHAIR 1 TO OFFER MAGAZINE MOVES BACK TO 3. SITS ON EDGE OF CHAIR. LEGS CROSSED. GESTICULATES. CHECKS WATCH.

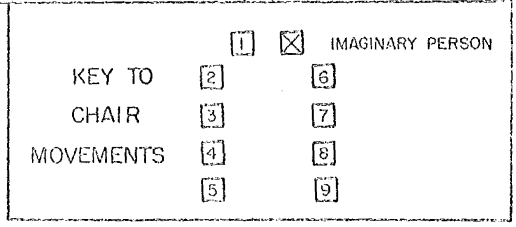
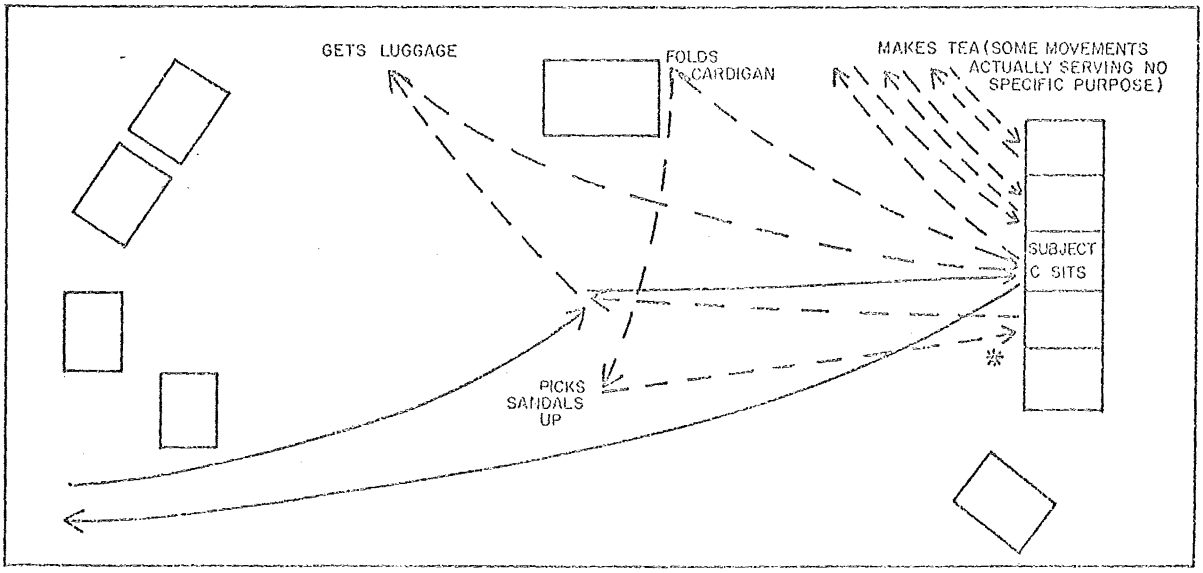


DIAGRAM 2: SPATIAL MOVEMENT IN ROLE PLAY SITUATION (PILOT STUDY 2)



between female adolescent and female adult behaviours[1] and possibly between Maori and Pakeha adolescent behaviour[2]. The variations may of course also be explained in terms of varying degrees of self-awareness and tension. Furthermore, although the instructions included the injunction 'you don't have to do anything, do just what you feel comfortable doing', there appeared to be a pressure implicit in the situation of being observed to do something (possibly because of the knowledge that the 'audience' were waiting for something to happen, possibly even a feeling of wanting to entertain). Another difficulty arising from the relatively neutral situation was the constraint implicit in the 'set'. Being in a waiting room seemed to carry an obligation to sit on the chairs and to stay fairly

1. This was noted in the response to the imaginary female teenager and to the young man. In the latter instance the adult non-verbal repertoire would seem comparable with what Scheflen has called 'quasi-courtship behaviours'.
2. However, the rocking, scratching and forward lean may be idiosyncratic rather than culturally acquired responses.

continuously in the same place[1]. An additional problem which was related to the setting was that the type of interactions which might occur in a waiting room are limited and consequently the non-verbal repertoire utilized, although exhibiting some variation[2] also showed many similarities. This latter fact probably in part accounts for the difficulty of the decoders to decide who was being interacted with as the nuances were quite subtle. Moreover as already indicated not all the behaviours observed necessarily indicated something about the other person in the room but may have simply reflected the subject's discomfort in the experimental situation.

In order to try to reduce the tension of a waiting situation and to allow an extension in the non-verbal behaviours used, an alternative method was tried in Pilot Study 2. Situations were selected in which

1. No subject felt able to move freely around the room. This might of course have been influenced by the assumed presence of another person in the room or, however, by the level of tension experienced by the subjects in the unnatural situation.
2. Children were for example approached most proximally, then old people, then peers and other young people.

interaction between the individuals might be predicted to occur and the subjects were asked to role play them. This was undoubtedly successful in terms of reducing the subject's level of self-awareness (C commented, 'I forgot the camera when I was having fun', and M stated, 'I was carried away in the scenes and forgot I was being filmed'; V indicated too that the less formal arrangement of the furniture and smaller distances also eased tension: 'It is much better closer in than spread out in the room because you feel more family like'). It produced,however, a multiplicity of spatial distances, (as is indicated in Diagram 3), ranging from no distance at all in a comforting situation when one subject put her arm around the other, to movements backwards and forwards comparable with Leerlauf or displacement activities and conceivably serving the purpose of releasing the subject's own arousal. While this trial study certainly sensitized to the dynamic and complex nature of spatial behaviours, it was considered that it did not

offer a basis for understanding the factors determining adolescent spatial behaviours. Once these have, however, been established, role plays do undoubtedly offer a very useful tool for investigating whether adolescents, when taking on the role of a child or an adult, also utilize spatial and other non-verbal behaviours typical of those roles.

The third pilot study followed the challenge of Horowitz et. al. (1964) to replicate their study of the 'body-buffer-zone'. It was, however, decided, while following the original study as closely as possible, to refine it. This was done firstly by distinguishing between being approached (subject passive) and approaching. It was thought that the former situation might prove more threatening and, since the instruction to remain standing where they were would prevent the normal spatial adjustment, a larger spatial distancing might be anticipated. Secondly it was decided to use a range of assistants rather than just one (a peer, a female adult, a male adult).

Horowitz and his associates give no information about verbal or non-verbal reactions of subjects in their study. Perhaps they did not occur or perhaps they were ignored.

In this pilot study in contrast the weaknesses of this kind of contrived experiment were quickly apparent. Subjects on more than one occasion attempted to manipulate the distance the other one chose - by verbalizing their disappointment and hurt at the distance kept and by attempting to engage in active non-verbal interaction with the approaching person[1]. It was also noted that peer collaborators showed a marked hesitancy to approach closer than they themselves felt comfortable[2]. The obvious sensitivity to spatial distancing shown by the subjects by such comments as 'I always keep far away from men', 'you can come as close as you like' (to a close girlfriend) and the

1. This was particularly acute with peers.
2. They slowed down rather than wait for the subject to say'stop'.

and the additional non-verbal cues emitted which indicated that subjects were almost certainly functioning at varying arousal levels[1], led to serious doubts about the utility of such a procedure. This was underlined by the behaviour of one subject who began to try and use space deliberately and expressively.

Certain pertinent details, however, did emerge from this particular pilot study. It was noted that, while the experimenter and her adult collaborators as far as possible, offered identical approach conditions to all subjects[2], the European girls readily sought out this initial eye-contact and made eye-contact once they stopped at their selected distance, the Maori girls avoided initial eye contact, approached with down-cast eyes and at least in the case of adults (male and female) continued to avoid eye-contact once they had stopped. Further, the few trial subjects showed

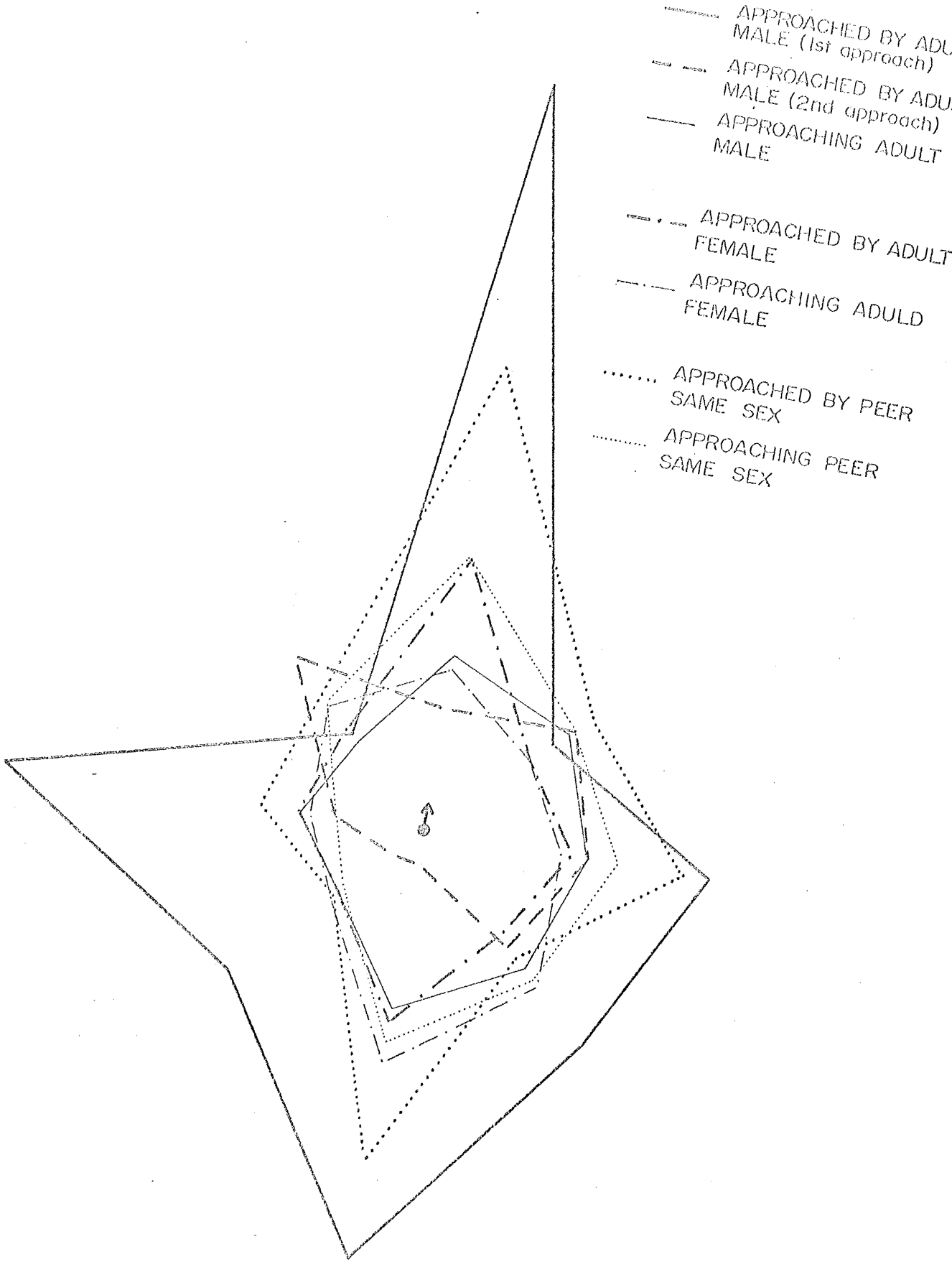
1. One Maori girl for example raised and shook her fist at the Maori peer she was approaching from the front; a part-Maori girl rested her head on the male adult assistant's shoulder while her selected interaction distance was being measured.
2. They engaged in momentary eye contact and smiled when the subject stood ready to approach from any of the frontal angles and then dropped their gaze so as not to exhibit a 'threat' stimulus.

considerable response variation depending on who the approached or approaching assistant was, and only the European girl showed a series of responses comparable with Horowitz and his associates' findings[1]. The Maori girls showed a need for greater space around them (possibly because the experimental situation was more anxiety arousing), and strong variations in response, particularly to the male assistant. Examples of the response pattern of a European and Maori girl are seen in Diagrams 4 and 5. These tentative findings underlined the importance of understanding what space means to Maori and Pakeha adolescents. While the different results obtained here may simply reflect behaviours of subjects from an atypical population, the variations in response to the different assistants demonstrates the possible invalidity of Horowitz et. al.'s conclusions.

The Kuethe-type schemata booklet and the sentence

1. Her overall responses were, however, more distant than those for either normal or schizophrenic individuals.

PILOT STUDY 3: RESPONSES TO ACTIVE AND PASSIVE APPROACH - (a) MAORI GIRL



PILOT STUDY 3: RESPONSES TO ACTIVE AND PASSIVE APPROACH - (b) EUROPEAN GIRL

——— APPROACHED BY ADULT MALE (1st approach)

– – – APPROACHED BY ADULT MALE (2nd approach)

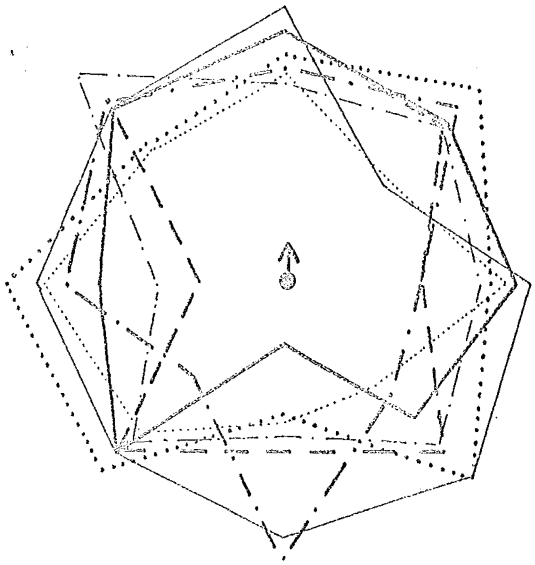
——— APPROACHING ADULT MALE

—·— APPROACHED BY ADULT FEMALE

—·— APPROACHING ADULT FEMALE

····· APPROACHED BY PEER SAME SEX

····· APPROACHING PEER SAME SEX



completion task proved, even in the pilot study stage, as compared with the other direct measures, relatively problem free. The adolescents (N = 10) found the task of drawing around cardboard figures straightforward, although their criticisms of the relative size of the figures representing themselves to that of the adult figures, led to a modificication in size. The adjustment made was so that the figures were proportionally appropriate for the average height N.Z. adolescent in relation to the average size N.Z. man and woman. The figures were all kept somewhat smaller than Kuethe's original ones in order to leave a fairly large area of space on each page.[1] One Maori adolescent, despite the schema form of the figures, tried to deal with the task three dimensionally, in that she behaved as if she were facing the figure and tried to place herself in perspective in front of it. No means was devised for

1. In order to allow the distancing choice to be as differentiated as possible and not constrained by the measure used.

coping with this (free placement on the floor with cut-out figures created the same difficulties for her). The same atypical response was noted in one or two cases in the actual study, with one European girl drawing herself in the distance behind an 'admired male' figure and another part Maori adolescent giving up the whole task after trying in several ways to cope with perspective problems. The other girls completing the task in the trial study treated the relationship required as self-evident and at times made amused remarks or gave a commentary on their responses.[1] It was already apparent from these comments that some subjects 'corrected' their spontaneous response[2]. This, of course, raises the question of the way in which social schemata and affective reactions interact in a decision about a spatial response. All subjects in

1. 'I don't like children', 'I keep as far away from them as possible', 'I don't let them see what I am feeling'.
2. They were encouraged where this occurred to draw in both the original response and the correction.

the pilot study seemed to indicate that they did use varying spatial distances in various interactions, although it appeared at times that the space was treated symbolically (near = like; distant = dislike). One task included in the pilot booklet (the adolescent's position in relation to mother and father figures) was omitted from the final booklet for two reasons. Firstly those adolescents who had never known one parent or had lost that parent by death were perplexed by the task[1]. Secondly the actual significance of the distance on the paper seemed questionable as the adolescents tried on the whole to place themselves equidistant from them[2]. In free placement trials where the distance between the figures could be varied this still occurred.

The sentence completion task was constructed to give

1. They did not know how to respond. This would have presented a problem in the experimental test situation when a peer handed them the booklet with only a simple instruction.
2. Except where they had only known one parent.

information on the adolescent's feeling about herself (self-image), her relationship with parents and siblings, her reactions to tactile interactions and her ability to approach other people. It was considered that these might all provide significant data for understanding responses both in the schemata task and in the experimental situation. Some modification to the original sentences was necessary, mainly in the direction of clarification, e.g. adolescents tended to be unable to imagine their responses to someone touching them if they did not know who that person was. Once it was broken down into being touched by one's boyfriend or by a stranger nearly all subjects were able to respond. Some questions which appeared to have no particular significance for self-image, as they appeared to record transitory (probably quite fleeting) feelings (e.g. about hair, hands) and brought attempts at objectivity[1] were retained. These were interspersed between more significant sentences.

1. A girl might look at her hands or feel her hair.

The sentences were arranged in an order which it was thought would evoke divergent feelings and possibly activate different conceptual components. It was found in the pilot study (and this was confirmed in the study proper) that a subject unable to complete one particular sentence would usually also leave several others unfinished. These subjects were possibly reluctant to deal with the emotional content of certain questions. The original pilot task was given to ten subjects and the modified version was given to those in the group who had found certain questions in the original version difficult or unclear. While these subjects usually could not complete the modified version, it was noted that their responses for questions originally answered remained constant[1].

1. There were slight variations in wording but the same emotional content.

4.v. EXPERIMENTAL TOOLS SELECTED

The experimental tools selected were as follows:

1. A sentence completion task investigating spatial-tactile interactions.
2. Spatial distancing (chair) choices in experimental situation.
3. A sociometric analysis with partial ranking.
4. A social schemata booklet.
5. A questionnaire about past spatial experiences and familial spatial habits.
6. A questionnaire about sexual identity.

In the preceding section we have surveyed the experimental procedures that were abandoned and the reasons for doing so. It will be apparent that in many respects the final hypothesis adopted (4.i) grew alongside and at times out of them, as they demonstrated some of the problems conceived of theoretically. The

experimental tools which were finally selected, were chosen because they appeared to offer insight into those intraorganismic variables which were considered to have a bearing on overt spatial responses. The method finally decided upon was as follows. The subjects would be requested to complete various paper-and-pencil measures within an experimental situation which involved spatial distancing choices (in this case seating choices). Some of the desired data was, however, gathered prior to the experimental situation as it was felt that some subjects would be daunted if too extensive a range of tasks were presented to them all at once. This led to the sentence completion task investigating spatial-tactile interactions being completed by subjects prior to the commencement of the two phase experimental procedure[1]. The task was always given to the subject when she was able to respond without

1. One subject refused to complete it at that time, but was willing to do so at a later date.

other peers being present either in her own room or in that of the experimenter. As has already been indicated in the previous section, the sentence completion task acquired its final form after trials had refined or removed ambiguous questions. The reasoning behind the questions chosen will now be delineated.

The aim of the sentence completion task was to devise a free choice situation with certain key concepts e.g. self-image/self-esteem, body image, spatial response freedom (approach versus interactional inhibition), feelings about family members etc., being touched on through the sentence beginnings selected. Although the evocation of specific attitudes associated with the intended triggers could not be completely guaranteed, and some subjects did deal with the emotive implications of some of the sentence beginnings by giving a banal or an objective response[1], most subjects responded on an affective level to the

1. 'When I look in the mirror I see myself', 'I think my eyes show...they don't show anything'.

verbal stimuli and revealed the attitudes hoped for (this was demonstrated in the pilot study).

That such an approach might prove viable had been suggested by the work of Jourard and his associates (1971) and Greene's (1964) sentence completion blank for measuring self disclosure. However, what was sought was not the level at which subjects were prepared to disclose themselves but rather the possible interplay between feelings about the self, the extent to which they could allow themselves to be approached and touched and their ability to extend towards other people. The actual relationship that might be expected from the literature reviewed might lead one to anticipate that those who felt vulnerable in terms of their body-image would express more reticence about allowing others to move towards them and possibly more hesitancy in their initiation of contact with others[1].

1. Although the work of Sommer had suggested that sometimes a willingness to adopt spatially offensive tactics might be a means of self-protection too.

The more difficult problem both in terms of the literature and in the use of psychological constructs was the question of the relationship between such terms as body-image, self-image and self-esteem. It was considered in this study that an individual's self-image is the product of the sum total of the individual's self-perceptions[1]. It was realized therefore that by tapping exclusively body feelings and body perceptions (My body feels....; When I look in the mirror...; My hair feels....) only one facet of the self-image would be obtained. Attempts, however, in the trial sentence completion task to obtain data relating to self-esteem and self-assessment had shown that adolescent females were generally unable to express either positive or negative feelings about themselves in response to a paper-and-pencil type task[2]. Indeed they

1. These will consist not only of her visual perceptions of her body and her body feelings but also her conclusions about herself from her intellectual capacity, predominant emotional mood and assessment of her social background.
2. Despite the fact that they are often able to express at least negative feelings about themselves within a counselling situation.

found it difficult in the written task even to express this type of feeling range about siblings (e.g. in response to a sentence beginning such as 'The nicest thing about my brother/sister is..'). What it was found could be obtained were responses to theoretical situations. These were considered to be useful in that they would, if only on an imaginative level require an assessment of the situation and a stated response to it; the kind of questions chosen were, 'If my mother puts her arm around me...', 'If I see a small child crying...', 'If a stranger puts their hand on my shoulder'. While these imaginative response choices may not necessarily be converted into overt response, they were nevertheless thought to indicate the attitudinal factors and response willingness/unwillingness with which the subject would have to deal in making a response. The extent to which all or any of the attitudes recorded would be incorporated into the determination of particular spatial behaviours was initially inferred and could only be proven by relating this to the other measures and other

data available. A copy of the sentence completion sheet used is included in the Appendix.

The work of Sundstrom and Altman (1974) had shown fairly convincingly that the spatial interactional modes[1] within a male adolescent community were subject to temporal variations which were attributable to changes within the peer hierarchy. As these same kind of peer pressures and hierarchy struggles have also been observed in the female adolescent community studied[2], it was considered important to try and establish the peer group acceptance/rejection accorded to all girls in the study. (This was extended to all girls within the institution, including a few who did not participate directly as they fell outside the age range selected or were on home leave at the weekends used for conducting the main part of the study). The method used to investigate it was by sociometric analysis with

1. In particular, demonstrations of territorial behaviour.
2. It seemed for example, that at any one time there had to be a girl who was considered 'king pin' or the 'top heavy'.

partial ranking. This approach is not without certain methodological difficulties. Indeed the validity of Holland and Leinhardt's criticism that techniques of sociometric analysis 'have failed to yield unequivocal results because of their inability to distinguish structural complexity' (1974 in 'Measurement in the Social Sciences', ed. H.M. Blalock) is not disputed. No better techniques seemed, however, to be available, as the comparison of various girls' analyses of even a home unit peer group structure as compared with that provided by various staff members showed considerable variation[1]. The sociometric method used required subjects to make two sets of choices one asking about a person they would like to go on an outing to the pictures with, the second asking who they would like to flat with. (There are two flats on the property so this was a fairly real decision situation for the adolescents.) Two control questions were included

1. Possibly because they were influenced by their idealized view of the peer hierarchy, or by dynamic changes which were imminent.

asking who was the most popular girl and who was most often picked on by other girls. The reason for this was that it was thought that establishment of a peer hierarchy might be influenced predominantly by who was the physically most dominant girl and that this might not necessarily equate with the girl who most people liked. It was realized that if this were so there might be various types of status. A further control was exercised in that girls were also asked to specify whom they would not like to be involved with for either of these activities. The adolescents were requested to make three ranked choices to each question (although some did not do so). It was planned to relate the data on the peer status of the girls to other space-related data and to their seating choices (particularly in relation to the peer assistants). When the original experimental situation was replicated, the sociometric choice task was also repeated which offered some idea of the stability of choices made and possibly of the stability of the peer hierarchy.

As just indicated the sociometric task was one of those performed in the experimental situation. This was completed on both occasions when the girls reached the experimenter so that the presence of a peer assistant sitting at the table and potentially able to see her choices would not influence the decisions. Those girls who were unable to complete the replication of the original study were asked by the experimenter to fill out a sheet in the two weekdays subsequent to the days of the study. It was realized that this meant that the sociometric data did not fit absolutely to one particular point in time but would nevertheless still show where the peer hierarchy had remained apparently stable.

The other task which was replicated was that involving responses to social schemata. The problems of Kuethe's approach have already been dealt with in some detail in the theoretical considerations. Suffice it to say that the task was given, not because it would necessarily record social schemata but because

it was suited to showing both group response tendencies and cross-cultural variations should they occur. (A copy of the Kuethe-type booklet is included in the Appendix).

The other tasks carried out in the experimental situation were, in the first phase of the study, a short sheet of questions on place of birth, extent of family mobility, whether the subject was used to sharing a bedroom with other siblings, future desired place of residence (copy of questions included in the Appendix). Since the accuracy of some of the answers could be verified by data already available it could be presumed that the subjects probably answered all questions as accurately as they could. In the second phase of the study the subjects were given a further short series of questions which were intended to clarify the girls' sexual identification and in particular their attitude to being born the sex they had been. This was devised to try and find explanations for the variations in Maori and Pakeha response patterns and this was

considered a likely area of discrepancy.

The peer assistants chosen to help in handing out the paper-and-pencil measures and who were themselves an integral part of the study as regards seating choice, were selected because they were considered to have, at least theoretically, an identical spatial relationship to all other girls in the community. This was because the three assistants lived in the school girls' flat and were no longer part of the house unit structures (their sociometric choices indicated that in sociometric terms, they were a clique). It was decided to use a Maori and European assistant in the experimental procedure to ascertain whether the girls responded differentially spatially to members of their own racial group. As the possibility that responses might be influenced by whether one or other were approached at the first table or the second, the assistants swapped places half way through each experimental phase.

The supposition of what would occur in the experimental situation was as follows: The subject on

entering a known area would be faced on arrival with a choice of which of three seats to sit in (point A). It is felt that that decision might be affected by the presence of the other people in the room[1], by environmental variables[2] and possibly by culturally learned or innate spatial distancing concepts[3]. That initial choice it was further suggested might or might not be subjected to scrutiny by the subject before making the first decision. In some cases self awareness might only occur after the choice has been made. Thus when the subject faced the second decision-making situation, she might follow the previous choice[4], or she might vary it. The actual procedures followed will be outlined in more detail in the following section.

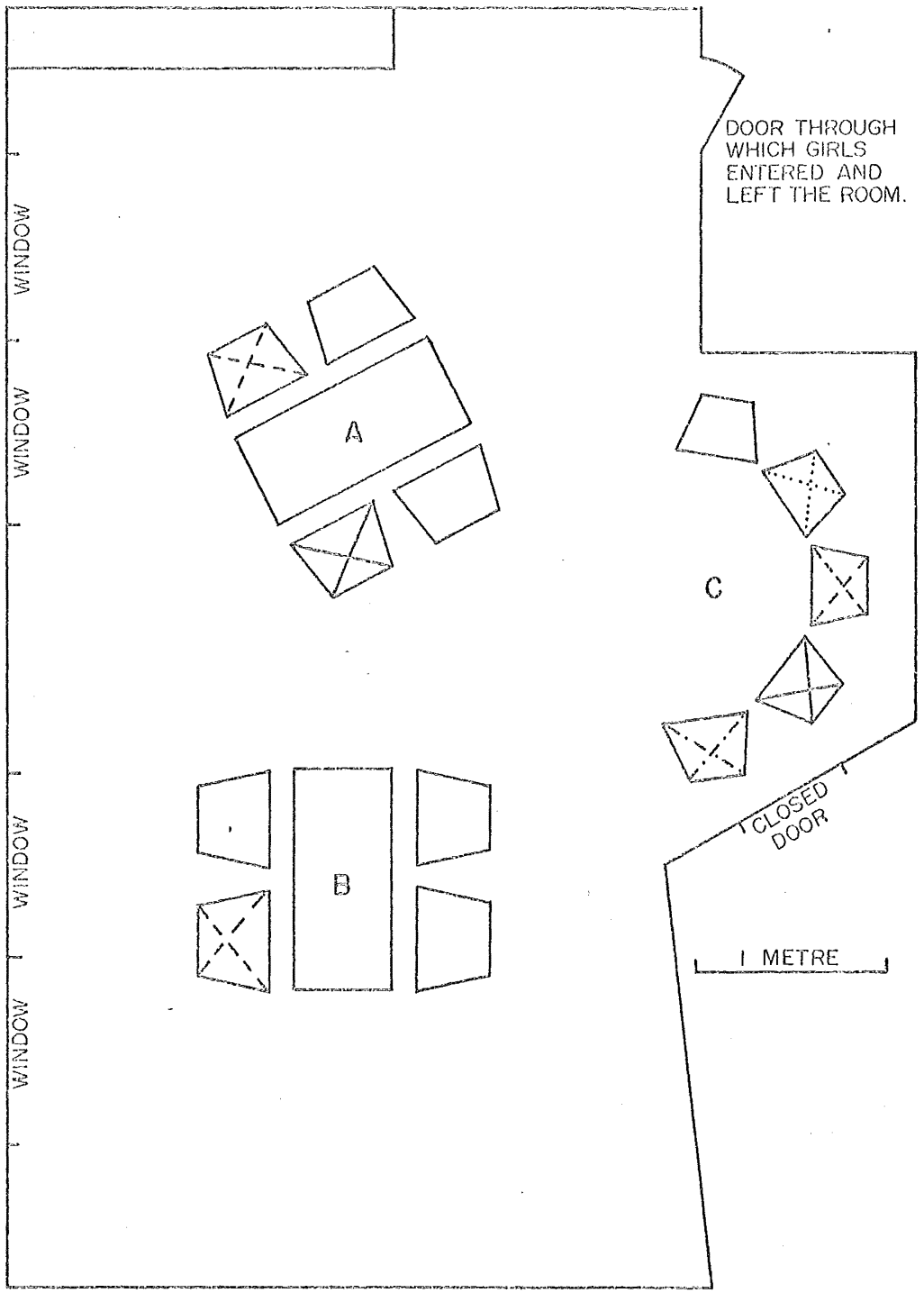
All additional data which was used in this study

1. A constraint might be felt to make the decision quickly. They might try and assess what response was expected.
2. Colour of chair, relationship to door/window, etc.
3. This would involve an assessment of the situation in terms of sex and race of the other person, the degree of familiarity with other person, the level of arousal produced by the situation, etc.
4. The room was set up so that although doors were in different positions as many environmental factors as possible were kept constant.

was tabulated and will be included in the section on the correlation between spatial attitudes and spatial behaviours.

4.vi. DESCRIPTION OF EXPERIMENTAL PROCEDURE

The main experimental procedure was carried out in three stages. Each subject was asked by a message sent by phone to enter the conference room by the outside door (the usual door of entry for girls going into that area). The room was set out as indicated in the scale diagram. On entry the subject was asked by the adolescent assistant at table A to come and sit down but no direction was given as to where to sit. The peer research assistant sat with all sheets of paper kept directly in front of her so that all three other spaces at the table appeared unoccupied (avoidance of markers). The distance from the door to either side of the table was equidistant and, as it was thought possible that both the direction of light from windows and the


WINDOW
WINDOW
WINDOW
WINDOW
DOOR THROUGH WHICH GIRLS ENTERED AND LEFT THE ROOM.
A
B
C
CLOSED DOOR
1 METRE
Chair occupied by peer assistant / experimenter for first 10 subjects, and by peer assistants for every alternate group of 10 subjects.
Chair occupied by peer assistants/experimenter for subjects 11 to 20, and by peer assistants for alternate group of 10 subjects.
Chairs occupied by experimenter for subsequent groups of 10 subjects.

position of the free side of the table (i.e. whether it was towards the middle or the outside of the room) might be significant the research assistant changed the side on which she sat each time ten subjects had completed the experimental task. The subject was only handed the written task once she had made a seating choice. If a subject asked where she should sit[1], she was told that she could sit wherever she liked. The adolescent assistant had some school work or a book with which she occupied herself when the subject was filling out the Kuethe-type booklet. This was done so that as far as possible the subject would not feel inhibited or that she was being watched. Once she had completed the task she was directed by her peer to go to the other peer assistant. On those occasions when the assistant had not noticed the moment the subject had completed the task, the subject invariably asked what she should do next. She was given the same instruction as when the assistant had from gestures

1. This only occurred in fact in one instance.

and sounds become aware that the task had been completed.

Table B was arranged so that as far as possible the two sides with chairs at them were again equidistant from the subject (in order to avoid the seating choice being affected by the nearness of the chairs). As in the proceeding situation the peer assistant kept all papers directly in front of her, changed sides of the table each time ten subjects had completed the experimental measures and only handed the subject the written task once she was seated. Once the task was finished she directed her to point C where the experimenter was sitting. The experimenter smiled at each subject when she stood up and turned towards C and then glanced down again until the subject had made a seating choice. In most cases this downwards glance was only for a few seconds and was considered to equate with normal non-verbal behaviour preparatory to an interaction. In one case, however, where a subject exhibited considerable hesitation as to where to sit, this may have appeared

more unusual. The posture was however, retained so as to avoid giving any cues as to where the experimenter might want the subject to sit. The experimenter sat in a moderately relaxed position with arms and legs kept as far as possible in identical postures for all subjects (variation in centimeters might have occurred but the general bodily posture was kept constant). The experimenter, as in the previous task situations, did not hand the subject the paper and pencil until she was seated.

During the initial part of the experiment the subject was the only other person in the room apart from the two peer research assistants and the experimenter. Not until the subject had finished the task at Table B did the assistant go to the phone and ask the next subject to come across. It was arranged in this way to avoid subjects modelling on the spatial responses of their peers. On two occasions when subjects did accompany another one or arrived before they were requested, they were asked to sit in a chair

provided in the porch which did not allow a view into the room. In case any influence was exerted either by the race of the peer assistants or by their place in the peer hierarchy, they changed places once half of the subjects had completed the experimental tasks.

Although the atmosphere in the room was on the whole one of quiet concentration and the noise level was low[1], absolute silence was not maintained. Firstly normal social greetings were used in that each subject was acknowledged on entering the room and was thanked and farewelled on departure. This was felt to be important as it was considered that some previous experiments may have been effected by the failure to use normal interactional modes. It was thought that should these have been missing, they would have intensified the apprehension and anxiety of the subjects. Further, while neither the peer assistants nor the experimenter initiated conversation, should the subject ask any questions

1. The experiments were carried out at weekends when the administration building was not generally in use.

(whether relevant to the tasks they were carrying out or not), they were answered in a friendly direct manner.

Although all subjects had been informed prior to arrival in the experimental area that the experimenter needed them to assist with the tasks for some work she was doing at the university, some subjects did seek further information and clarification. While the subjects seemed on the whole satisfied that their co-operation would be helpful to the experimenter and the tasks they were asked to perform appeared to be straightforward enough for them to accept them on face value, some enquiries did arise. These were predominantly about such factors as how long the tasks would take to complete[1], whether they were completing the tasks correctly[2] and statements and questions which indicated that they felt self-conscious (e.g. comments

1. The approximately ten minutes involved for each subject appeared to be quite acceptable as no subject withdrew from the study. This might of course have been influenced by the experimenter's authority.
2. Such questions were always followed by a statement that there were no right or wrong answers and that they were doing fine.

about their ineptness in copying round the figures in the Kuethe-type task, laughter or comments about their responses). The peer assistants were instructed to cope with these behaviours in a friendly manner (smiles, remarks like 'that's O.K.') but not to influence the decisions of the subject in any way.

The subjects were given a small reinforcement (lollies) after completing the three written assignments. The reward was kept at a token level so as not to seem inappropriate to the relative ease of the tasks which the subjects were required to complete. The purpose of the reward was both to enhance the willingness of the subjects to participate in the study[1] and to minimize any negative communications when the subject returned to the peer group. It was also thought that the anticipation of a reward might influence subjects to 'earn' it by completing the task in a serious manner.

1. A few subjects did indicate that the appeal of some lollies had overcome their hesitancy to participate in the study.

This might have been an unnecessary precaution as the subjects have usually shown a certain delight in completing questionnaires, which seems to be related to their appreciation of being taken seriously and having someone believe they have something to say[1].

The temperature in the room was kept at one comfortable for sitting in, the door through which the girls entered and left was kept open and a window was also open. The usual features of the perceptual environment (two pictures containing coloured photos of the girls involved in activities, the coloured television, a small cabinet containing china) were left in their usual places. Some concern was felt that the chairs at points A, B and C were of different colours. The selection was made, however, so that tones of one colour or the same colour were used in the separate areas (i.e. at A greens, at B orange, at C greens), to

1. This may be characteristic of adolescents as a whole, as the experimenter found in a previous study with Swiss adolescents an equal willingness and enjoyment in being involved in expressing their opinions and attitudes.

try and avoid chair choice being influenced by colour preference. Those chairs not being used (mainly blues, browns and golds) were placed around the walls of the room. Any chairs which were moved out of position during the course of the experiment were unobtrusively returned to their previous position. The chairs were arranged in relation to the table so that one could comfortably slip into them with the minimum of effort or movement.

When the experiment was repeated two months later the details described above were all kept constant. The only variations were as follows: the Pakeha peer assistant was unavailable so that the other Pakeha adolescent in the school girls' flat took her place and the Kuethe-type schemata task was completed at Table B instead of on immediately entering the room (to try and combat any opposition at doing the same thing a second time; the task given at Table A was a new one). The experimenter wore identical clothing to that worn

in the first experimental situation. The adolescent assistants wore their usual freetime clothing preference of a casual top and jeans. All tasks were carried out during the daytime (between 11 am and 4 pm) and natural light was used[1].

5. RESULTS

5.i. SEATING DECISION TASK

In situations A and B both Maori and European girls showed an overall preference in the direction of the side-by-side seating position. The preference was, however, more pronounced for Maori girls. Out of a total of 44 seating choices, they selected the chair

1. This was considered important as there have been suggestions that some spatial behaviours may be exclusively daylight phenomena and influenced by light intensity.

beside the peer 34 times. When this was compared with the responses of the European girls, who had selected the chair beside the peer 19 times out of a total of 34 seating choices, there was found to be a statistically significant difference in response (chi-square = 4.37, 1df, $P < .05$. The direction of the difference was in a proportionally higher number of European girls selecting the chair opposite the peer assistant. When the responses of the part Maori group was compared with the responses of the other racial groups, these were found to be significantly different from neither of the others (compared with the Maori group, chi-square =0.14, 1df; compared with the European group, chi-square = 1.35, 1df). Although the number of part Maori girls was small (so that Yates' correction had to be used to be able to compare the data) and the seating choices when compared against probability for responses of both groups was not significant, the results for this group showed a response bias in the direction of the side-by-side

seating position against the seat opposite in the ratio of 6:1. This response ratio was closer to that of the Maori girls which was just above 5:1 as contrasted to the European response ratio which showed a bias of less than 2:1 (1.91:1). For all groups the diagonal seating arrangement was the least preferred and selected in total by the three groups only eight times out of ninety two choices. If the assumption of all chairs being equally likely choices were correct then the diagonally placed chair should have been selected 30.67 times. When the total responses were collated for all adolescents tested (this included a small number from other racial groups), 64.15% of the choices were for the chair beside the peer, 26.42% for the chair opposite and 9.43% for the diagonally situated chair (all responses are given in Table 1). This would indicate a preference of the girls for a side-by-side seating arrangement in the experimental situation. The response preference appeared to be unrelated to the race of the peer assistant as choices

TABLE 2 CHAIR CHOICE WITH PEER ASSISTANTS

	MAORI Trial 1 N=13		Trial 2 N=10		TOTAL	EUROPEAN Trial 1 N=10		Trial 2 N=8		TOTAL	PART MAORI Trial 1 N=4		Trial 2 N=3		TOTAL	OTHER (Islander, Chinese etc.) Trial 1 N=4		Trial 2 N=3		TOTAL
	A	B	A	B		A	B	A	B		A	B	A	B		A	B	A	B	
BESIDE	10	9	8	7	34	6	5	5	3	19	3	3	3	3	12	0	0	1	2	3
OPPOSITE	2	2	1	1	6	3	4	2	2	11	1	1	0	0	2	3	3	2	1	9
DIAGONAL	1	1	0	2	4	1	1	1	1	4	0	0	0	0	0	1	1	0	0	2
TOTAL	13	12*	9*	10	44	10	10	8	6**	34	4	4	3	3	14	4	4	3	3	14

* one answer not valid ** two answers not valid

ALL ADOLESCENT RESPONSES COMBINED

	T1 N=31	T2 N=24	TOTAL
BESIDE	36	32	68
OPP.	19	9	28
DIAG.	6	4	10
TOTAL	61	45	106

TABLE 3

SEATING CHOICE ACCORDING TO RACE OF PEER ASSISTANT (Trial 1)

	MAORI[1] TO M.	E.	TOTAL		EUR.[2] TO M.	E.	TOTAL		PART M.[3] TO M.	E.	TOTAL
BESIDE	10	9	19		6	5	11		3	3	6
OPPOSITE	2	2	4		3	4	7		1	1	2
DIAGONAL	1	1	2		1	1	2		0	0	0
TOTAL	13	12*	25		10	10	20		4	4	8

*one Maori adolescent pulled up a different chair directly beside European peer

1= Maori responses to Maori peer (M.) and European peer (E.)

2= European girls' responses to Maori peer and European peer.

3= Part Maori girls' responses to Maori peer and European peer.

of all three racial groups were equally divided between the Maori and European peer assistants (see Table 2), irrespective of whether the Maori or the European peer was situated at table A or B.

In situation C all subjects sat in a chair next to the experimenter regardless of where she was sitting. This was true for all racial groups both in the first and second parts of the experimental procedure. When the experimenter sat in a chair with vacant chairs either side the girls showed no significant preference for sitting on the right or lefthand side of her. In the first part of the experimental procedure 5 Maori girls sat on the experimenter's right, as compared with 7 European girls and 9 sat on the left as compared with 4 European girls (chi-square = 1.92, 1df, not significant).

5.ii. SCHEMATA RESPONSES

The results of the schemata tasks in the first phase of the experiment are shown in Table 3. The most

significant factor which emerged from the results was that the responses of the Maori and European girls in five out of seven schemata tasks were at too great a variance to be correlated, i.e. they indicated that significant racial difference in response to certain schemata tasks existed. The only instances in which the schemata responses could be correlated were in response to a disliked woman and to a female adult stranger. In these cases the correlation showed no significant variation between the responses of the two groups. In the five tasks where the variation between the two groups was too great for correlation the means of the Maori girls' responses were in all instances greater than those of the European girls, i.e. they consistently selected larger spatial distancing in the schemata tasks.

When sub-sets of the two groups were retested with the same set of schemata tasks two months later the Maori girls showed a high level of consistency in response in six out of seven tasks (see Table 4),

TABLE 4

SUMMARY OF RESULTS FROM INITIAL SCHEMATA MEASURES*

SCHEMATA TASKS		M1	M2	M3	M4	M5	M6	M7
MAORI GIRLS	$\bar{X}$	4.06	1.55	4.93	4.88	11.72	7.43	4.04
EUROPEAN GIRLS	$\bar{X}$	2.22	1.08	3.69	1.92	12.09	1.09	1.93
MAORI GIRLS	s	5.22	1.57	4.45	4.75	6.54	8.08	5.27
EUROPEAN GIRLS	s	0.85	0.95	4.64	1.34	5.50	1.01	0.76
F RATIO		32.81	4.82	0.87	12.45	1.52	60.82	45.07
t		N/A	N/A	0.79 n.s.	N/A	0.18 n.s.	N/A	N/A

*Complete tables of individual results can be found in Appendix II.

TABLE 5.i. MAORI ADOLESCENTS' RESULTS TEST/RETEST OF SCHEMATA MEASURES

	M1 T1	M1 T2	M2 T1	M2 T2	M3 T1	M3 T2	M4 T1	M4 T2	M5 T1	M5 T2	M6 T1	M6 T2	M7 T1	M7 T2
$\bar{X}$	3.20	4.50	1.66	1.67	4.38	5.31	5.23	5.29	11.98	11.86	6.05	6.31	5.38	4.55
s	1.58	5.67	1.65	1.72	3.48	4.83	5.07	5.13	6.12	6.93	7.37	7.78	6.31	5.69
r	0.74		0.57		-0.13		0.78		0.78		0.82		0.50	
t	3.81 signif. .01		2.30 signif. .05		0.43 n.s.		3.94 signif. .01		4.13 signif. .01		4.05 signif. .01		1.92 signif. only .10	
p	0.42 n.s.		0.50 signif. .05		0.18 n.s.		0.68 signif. .05		0.83 signif. .01		0.92 signif. .01		0.64 signif. .05	

TABLE 5.ii. EUROPEAN ADOLESCENTS' RESULTS OF TEST/RETEST OF SCHEMATA MEASURES

	M1 T1	M1 T2	M2 T1	M2 T2	M3 T1	M3 T2	M4 T1	M4 T2	M5 T1	M5 T2	M6 T1	M6 T2	M7 T1	M7 T2
$\bar{X}$	3.10	1.90	0.94	1.10	3.88	4.17	2.17	1.46	11.17	11.98	1.90	1.08	1.81	1.83
s	2.85	0.94	0.43	1.02	1.52	5.32	1.93	0.85	7.33	5.76	2.23	1.13	1.32	0.71
r	0.16		0.43		0.75		0.21		0.92		-0.14		0.62	
t	0.51 n.s.		1.58 n.s.		3.76 signif. .01		0.14 n.s.		7.79 signif. .01		-0.4 n.s.		2.50 signif. .05	
p	0.50 n.s.		0.51 signif. .05		0.47 n.s.		0.37 n.s.		0.76 signif. .01		0.22 n.s.		0.59 signif. .05	

M1 girlfriend
M2 child
M3 female stranger
M5 disliked female
M6 boyfriend
M7 female staff member
T trial

whereas the European girls' responses showed a low level of consistency in four out of seven tasks (see Table 5).

5.iii. SOCIOMETRIC ANALYSIS

The results showed a moderately high degree of stability over time in both the affiliative responses and the responses indicating dislike or disassociation. This was true for both the Maori and European girls and true in response both to choices based on a decision relating to shared recreation and shared living space. The correlation of results (using Pearson's product-moment correlation) from the first and second phases of the experimental procedure are shown in Table 6.

	Affiliative recreational r	Affiliative living space r	Disassociative recreational r	Disassociative living space r
Maori girls N=16	0.58	0.71	0.76	0.90
Eur. girls N=17	0.76	0.89	0.81	0.48

TABLE 6: Correlation between the affiliative and disassociative responses of both groups in first and second phases of the experimental procedure.

When a correlation between the scores for individual items for Maori and European girls was made (see below in Table 7), some variation was apparent for affiliative choices. The nature of the variation was that the Maori girls in these instances had a generally higher place in the peer hierarchy as determined by their scores on these items.

	TRIAL 1	TRIAL 2
F Ratio	0.89	0.83
t	1.02	1.21

TABLE 7: Results of F Ratio (applied as dealing with small groups of less than 30 to establish whether the variance between the groups was too great to proceed with correlation and between-group correlation where applicable (t).

A cumulative score for the first and second series of choices was also calculated by subtracting the total negative score from the total positive score for each individual. (The choices were given a score of 3, 2 or 1 or -3, -2, -1 respectively, depending on whether they were first, second or third choice and whether they were positive/affiliative or negative/disassociative choice.) The scores were then correlated to ascertain whether there was overall stability. The ranking in

the peer hierarchy (based on the cumulative scores) in the first and second phase of the experimental procedure was also correlated. The results confirmed that a fairly high degree of stability existed both in response and in the peer hierarchy over time. The results are shown in Table 8.

	Pearson's Product-moment Correlation	Spearman's Rank Correlation
Maori girls	0.82	0.80
European girls	0.87	0.87

TABLE 8: Within-group correlation of cumulative scores and ranking in first and second phases of the experimental procedure.

The cumulative scores were also used to determine whether there was any significant overall variation between the peer hierarchical situation of the Maori and the European girls. This was not the case as can be seen from Table 9.

	Affiliative recreational T1	T2	Affiliative living space T1	T2	Disassociative recreational T1	T2	Disassociative living space T1	T2
F ratio	1.09	3.87	2.82	3.13	1.89	1.38	1.25	1.07
t	0.94	N/A	N/A	N/A	0.33	0.05	0.54	0.23

N/A not applicable T trial

TABLE 9: Results from application of F ratio to cumulative scores of the two groups (samples less than 30) and correlation between the groups (t).

It had been hoped to establish the validity of the above results by correlating them with the responses given to the questions 'Who is the most popular girl?' and 'Who can tell other girls what to do and they do it?' This proved unfeasible. Not only did girls in response to the two questions cite only a very reduced number of all the girls (so that the majority of the girls then had no rank in terms of this second ranking) but girls who had obtained overall a high <u>negative</u> score in the cumulative assessment of the

sociometric choices sometimes gained a high positive score in relation to these questions. It appeared that those who were considered to have a high popularity/dominance and those who evoked high levels of affiliative impulses were not necessarily the same people.

Summing the total positive and negative scores of the individual girls in both trials it was possible to divide subjects into two groups - of those whose overall score was positive (indicating their acceptability to peers) and those whose overall score was negative (indicating their unacceptability/rejection by peers). This was also done for the part-Maori girls and for the girls of other racial groups. The numbers in the groupings thus obtained were then tested against other spatial response results using a chi-square. The results were as follows:-

a. There was no significant relationship between the girls' dominant seating preference as shown in the experimental situation and their acceptance or rejection by peers (chi-square = 0.15, 1df).

b. When the responses of the Maori and European girls were taken, there was only a slight relationship between the girls' 'territorial' behaviour (ascertained by whether or not they had a favourite place on the property) and their acceptance or rejection by peers (chi-square = 1.28, 1df, $.20 > p > .05$). When, however, the responses of all the girls were taken ($N = 38$), the relationship was somewhat more pronounced (chi-square = 3.14, 1df, $.10 > p > .05$). This was as expected from the literature which suggests that some members of an adolescent community may maintain their peer hierarchical position by spatial claim behaviours.

c. There was no significant relationship between the girls' preference for a shared or individual bedroom space and their acceptance or rejection by peers (chi-square = 0.001, 1df - as numbers were small because some girls stated that they had no preference, Yates' correction was applied). From the literature which suggests that individuals who are

sensitive to their social unacceptability may keep spatially more distant from others such a relationship might have been expected. (This will be discussed further).

d. There was no significant relationship between a girl's level of intelligence and her acceptability to her peers (chi-square = 0.085, 1df, Yates' correction applied).

e. There was no significant relationship between the parents' marital situation (together/separated) and the girl's acceptability to her peers (chi-square = 0.28, 1df).

f. Some of the literature has suggested that individuals with a low self-image (and a concomitant feeling of high penetrability) may keep at greater spatial distances from others. As larger interpersonal distancing has been shown in some of the literature to be linked with more cautious/less overtly affiliative behaviour, one might have expected a relationship to exist between a girl's self-image

and her acceptability to her peers. Such a relationship was not revealed in this study (chi-square = 1.93, 1df. Yates' correction necessary).

g. Affiliative behaviour has on the whole been shown in the literature to be related to a willingness to approach others reasonably closely. If affiliative behaviour were a determinant of acceptability one would expect a relationship to be demonstrated between approach willingness and an individual's acceptance by peers. In this study, however, such a relationship was not shown (chi-square = 0.41, 1df, Yates' correction applied).

h. There was no significant relationship between a girl's relationship with her mother (good/poor) and her acceptability to her peers (chi-square = 0.4, 1df).

i. There was no significant relationship between a girl's relationship with her father and her acceptability to peers (chi-square = 0.02, 1df, Yates' correction applied).

5.iv. RESULTS FROM SENTENCE COMPLETION TASK AND QUESTIONNAIRES

Some results showed a dominant direction of response which was so great that they could not be related statistically to other responses. This was complicated at times by the fact that the relatively small number of subjects was reduced by some of them being unable to answer some of the questions.

The results of this type were as follows:-

a. In the sentence completion task 65.9% of the girls (N = 41) said that they did not like being touched when angry/in a bad mood.

b. In questionnaire 1 84.1% of the girls (N = 44) said that they would like a place to go where grownups could not enter without permission.

c. 77.3% of the girls said that they would like a comfortable place where they could go when they wanted to be alone.

d. In questionnaire 2 in response to the question about their behaviour when parents invited friends home eight Maori girls (N = 12) said they went out and

the remaining four said they felt shy or embarassed. The responses of the twelve European girls were divided equally between the three possible choices (shy, embarassed; pleased; go out).

e. In response to the question about their behaviour when left alone at home, eight Maori girls (N = 14) said they went out too, whereas only three European girls said they went out and eight of the remainder (N = 14) coped by watching TV or playing records. Although the numbers are very small they may conceivably indicate racial differences in coping with varying spatial/interactional situations.

f. There was a general preference for girls to want to be on their own when they were feeling sad (8 Maori girls and 7 European girls, N = 11 and 10 respectively).

g. In response to the question whether they would rather have been born boys or girls 10 European girls (N = 12) said they would rather have been born girls, whereas 11 Maori girls (N = 12) said they would rather have been born boys.

h. Both Maori and European girls considered that boys generally had more opportunities and advantages than girls but there was no significant difference between Maori and European girls in this (chi-square = 0.02). Numbers of course were small and must consequently be treated with caution but they may again indicate cultural variation in attitude.

The results obtained for preferring to have been born male or female were correlated with self-image scores (given in Table C in the Appendix) and with approach willingness/reticence (also given in Table D).

i. There was no statistically significant relationship between subjects' desire to have been born a boy or a girl and their approach willingness/reticence (chi-square = 0.67).

j. It was, however, noted that more girls who wished to have been born boys showed a reticence in approaching people they did not know. The majority

of these girls were Maori .

k. There was also no significant relationship between the desire to have been born a boy or a girl and the self-image score (chi-square = 0.59). If the wish to be born a boy or girl equated with the level of self-acceptance, one might have expected those who wanted to be born girls to have better feelings about their actual sexual identity and therefore to achieve better self-image scores. However, the ratio of those having a positive or partially positive (ambivalent) self-image who wished to have been born boys to those with a low self-image was in the ratio 2:1, whereas those who wished to have been born girls and had a positive self-image to those who had a poor one stood in a ratio of 1:1.2. This may mean that those who wanted to be born boys and were Maori had a better self-image. This former finding, if correct, is contrary to what had been postulated.

The attempt was made from the results obtained from the three measures to establish which of the postulated determinants might be of significance in the decisions expressed by subjects about spatial preferences.

A. Relating to Bedroom Spatial Preference (Separate or Shared).

a. Since the Maori culture is considered to be more oriented towards an extended family/community and more tolerant towards unexpected guests, it was thought that the Maori girls might show a stronger preference for shared rather than separate bedroom space. However, no clear relationship was established from the results obtained between bedroom spatial preference and the adolescents' race (chi-square = 0.58, 1df, not significant).

b. It has been suggested that there may be changes in spatial behaviour as the young person adapts to the physiological changes of puberty. It was thought possible that this might be expressed in spatial terms with younger girls exhibiting a different

spatial preference to older girls. In relationship to bedroom spatial preference, however, this was not substantiated (chi-square = 0.24, 1df, not significant).

c. The intra-familial density/habitual living-space conditions of subjects was thought to be a possible determinant of the desire for separate or shared bedroom space. It was anticipated that subjects who had lived at higher densities might show a different spatial preference to those who had always experienced more living-space. However, no relationship was found between the number of children in the adolescent's family and her bedroom spatial preference (chi-square = 0.19, 1df, not significant).

d. It was thought that previous spatial mobility and the type of bedroom space preferred might be related. This was shown to be the case. There was a statistically significant relationship between the number of moves an adolescent's family had made in her lifetime and her bedroom spatial preference

(chi-square = 5.25, $p < .05$). The direction of the preference was that girls who had experienced high levels of spatial mobility were more likely to want a separate bedroom. This relationship was independent of the race of the subject for it was found that subjects in neither group had moved significantly more often than those in the other (chi-square = 0.02, 1df). There was also no relationship between the bedroom spatial preference and the adolescents' wish to experience future spatial mobility (chi-square = 0.74, 1df, not significant).

e. It was considered possible that adolescents who preferred to have a separate bedroom space might also demonstrate a different way of coping with interactional space in unstructured freetime periods. However, no relationship was found in terms of the preference to be indoors or outdoors in school breaks and preferred type of bedroom space (chi-square = 0.04, 1df, not significant).

f. It has been suggested from the findings in previous

research that young people may use space to bolster their identity. Since it was considered that girls from broken homes might feel more threatened in terms of their identity, it was thought that a relationship might exist between the girl's bedroom spatial preference and her parents' marital situation. This was not, however, found to be the case (chi-square = 0.52, 1df, not significant).

B. Relating to 'Territorial' Behaviour (as Denoted by Having a Favourite Place on the Property).

The selection of a favourite place on the property was thought to be related to the use of the environment as a prop and to an emotional investment in it in terms of a projective mechanism (as previously discussed). It was anticipated that there might be significant differences in the attitudes of those who utilized space in this way and those who did not. This difference might be in the direction of those who were less secure and had a less firm sense of their identity needing an environmental prop. It was however, remembered that being in an unfamiliar, unacceptable

environment might inhibit an emotional investment in the physical surroundings. Interrelationships were therefore tested for which might prove or disprove either of these postulated reasons for or against this type of territorial behaviour. The results were as follows:-

a. There was no statistically significant relationship found between a more positive[1] or a low self-image and this form of territorial behaviour (chi-square = 0.68, 1df).

b. There was no statistically significant relationship found between willingness to initiate interactions with others and territorial behaviour (chi-square = 0.97, 1df).

c. There was no statistically significant relationship found between intelligence[2] and having a favourite place (chi-square = 1.43, 1df).

1. As determined by a positive or neutral self-image score.
2. The girls were divided into two groups - those of above average intelligence and those whose intelligence had to be calculated or estimated as average or less. It has been suggested that awareness of one's intellectual ability may be an integral part of the composite self-image. It was for this reason then that this relationship was tested for.

d. There was, however, a slight relationship between the adolescents' having experienced higher levels of spatial mobility (more than three moves in their lifetime) and their having a favourite place in their current environment (chi-square = 2.10, 1df, $.20 > p > .05$).

e. There was no statistically significant relationship between a girl's use of this form of territorial behaviour and her race (chi-square = 0.12, 1df), her age (chi-square = 0.96, 1df) or her parents' marital situation (chi-square = 1.34, 1df).

C. Relating Bedroom Spatial Preference to 'Territorial' Behaviour.

a. There appeared to be a possible tendency for those who had a favourite place also to prefer a separate bedroom (chi-square = 1.87, 1df, $.20 > p > .05$).

This must be treated as an exceedingly tentative deduction as numbers were small (N = 37).

6. DISCUSSION OF RESULTS

6.i. IMPLICATIONS OF RESULTS

We shall begin by considering the possible implications of the results from the individual measures and then look at their meaning in terms of the conceivable interrelationships between the results.

a) Seating Decision Task

The overall preference for the side-by-side seating position by the adolescents may be understood in a number of different ways. It could be interpreted as a retention of the dominant childhood interactional seating pattern. If this were the case it might be explained either in terms of the institution environment fostering the retention of childhood spatial interaction forms or as a demonstration of the

regressive tendencies[1] of these emotionally disturbed young people or as the girls being uncertain of what other seating arrangement was expected of them socially. It may, however, simply indicate that the young people assessed the experimental situation as friendly and non-competitive and responded according to this[2]. If this latter conclusion were correct, then it would be the atypical responses which needed some explanation. Again, however, there may be several possible reasons for the less popular seating choices. They may merely represent chance responses of those girls who were either unaware of a socially expected seating position in this particular inter-actional situation or who for some reason felt inhibited from exhibiting the expected response. One might suggest, although this is an extremely tentative

1. This would mean that the young people, while functioning at stages of development less than their numeral age, were nevertheless allowing themselves to 'make up' missed phases of development. This behaviour might then be a positive indication of the therapeutic nature of the environment.
2. The side-by-side seating position may be a general response to specific types of interaction and unrelated to age or phase of development.

hypothesis, that those girls who exhibited less typical responses tended to be girls who had low status in the peer hierarchy (this was not absolutely true but true in as far as all but one of the girls who had a high peer standing showed the preferred response). This latter tendency may, however, have reflected the fact that those girls whose interactional spacing behaviours were less predictable found it more difficult to establish stable relationships with peers. Certainly some of the subjects using other than the side-by-side seating position had been assessed psychologically as having contact problems with peers, being withdrawn, distrustful or showing schizoid tendencies (see Tables B and E). This was not, however, true for the whole group. Moreover, some other girls who had received similar diagnoses consistently selected the chair beside the peer.

The overall response preference in relation to same sexed peers may be related to the absolute seating preference with the experimenter. It has been

suggested that the adults within the institution environment take on a parenting role for the adolescents. The side-by-side seating choice in relation to a female adult may then be determined by a mother-child schema and may indicate the willingness of subjects to accept substitute parenting. It was, however, somewhat remarkable that all adolescents chose a chair directly beside the experimenter, for even if they had selected a chair one removed from that in which the experimenter was sitting, they would still have been within spatial range for casual social interactions and their behaviour would still have appeared affiliative. The chair beside the experimenter was, however,distinctive in two ways. First, by sitting directly next to the experimenter the subjects placed themselves in a situation in which tactile interaction could have occurred[1]. Secondly, by selecting a side-by-side seating arrangement the subjects chose the

1. The experimenter chose not to engage in tactile interaction with subjects as it might have seemed socially inappropriate to some of them in this situation. However, the subjects did place themselves in a position where tactile interaction was a possibility.

position in which they would be required to engage in the least eye-contact. It is possible that these two aspects are related. It has been postulated that the primary interactional mode and the dominant mode of interaction in childhood is tactile rather than visual (i.e. based on eye-contact)[1]. This is not to deny the place of eye-contact even in childhood but simply to imply that the least arousing/most comforting interactional mode may be tactile. Thus the selection of the chair beside the experimenter might be interpreted as the adolescents having chosen the seating position which most assuaged their anxiety[2]. It might, however, only mean that within the spatial environment in which the study took place the expectation was that the girls should relate in this way to adults.[3]

It has been indicated in the discussion of previous research findings that some individuals may use close

1. We related this to the original tactile symbiosis with the first mothering person.
2. That some anxiety was experienced by subjects was noted from their need to be reassured that they were doing the right thing, that the tasks would not take long, etc.
3. This seems, however, far less likely as the experimenter noted that when subjects came to her office there was considerable variation in seating patterns (ranging from side-by-side, to opposite, to preferences for angles of 45^{o}- 120^{o}).

spatial proximity offensively. It cannot be completely ruled out that the side-by-side seating choice by some subjects in this study was intended to convey/compensate for aggressive impulses felt towards the experimenter. However, this was considered the least probable explanation of the results, as those studies which have induced this type of offensive spatial strategy have been ones in which hostility was deliberately provoked by rudeness to subjects or where bizarre experimenter behaviour was exhibited. This particular study was carried out in a fashion intended to preserve as far as possible normal interactional behaviours and to be as unalarming as possible. Moreover, it was thought, that if subjects had intended their behaviour to be discomforting/threatening to the experimenter, they might have betrayed this by using eye-contact to enhance the effect (i.e. staring at the experimenter to induce flight). While it might be argued that the

experimenter's authority within the environment might have prohibited overt demonstrations of hostility or anger about the experimental situation, hostile feelings, if experienced, might have been demonstrated by non-verbal adjustments since these would have been least likely to be censored. One socially acceptable means of showing dislike/displeasure would have been for subjects to place themselves spatially at a greater distance from the experimenter rather than close to her. The subjects had showed an awareness of the affective content of such a spatial behaviour in the schemata task in response to a disliked woman.

We shall now consider again in the light of the argument thus far the seating behaviour in relation to the two peers. It is likely that some subjects may have felt more concerned about placing themselves in a situation which could, at least potentially lead to tactile interaction with a same-sexed peer, than others. This concern would presumably be based on the extent to

which they had come to terms with their own sexual identity and whether they felt that such tactile interaction, should it have occurred, would have indicated sexual abnormality (i.e. lesbian tendencies). It was noticed, although numbers are extremely small, that those girls who avoided the side-by-side seating position indicated that they would have chosen to be born girls if they had had the choice. Since this response is thought to be related to their acceptance of themselves as females, they may possibly as a result of this have experienced a more acute awareness of aberrance in wanting to relate closely with the same sex[1]. While it has generally been observed that females are less subject to social taboos on tactile interactions, it has been postulated that adolescents who are concerned about their sexual identity may still find behaviours which are socially accepted emotionally disturbing. It was noted in the results that the European girls were those who more often chose a chair

1. This would particularly be the case in situations which could not be considered to conform to the mother-child schema. The experimenter had on occasions been told by subjects that she was old and had sometimes been called 'mum' by certain girls who had developed a particularly strong transference to her.

other than the one beside their peer. This may mean that the European girls were more accepting of their identity as a female[1] but less certain of it (it was noted in the results that they tended to have poorer self-images).

The results could, however, be interpreted in another way. The dominant preference of Maori girls for a chair beside their peer might mean that they felt less compelled to conform to post-pubertal interactional spacing modes than European girls. Alternatively their behaviour may have indicated a cultural willingness to tolerate the spatial interactional modes of the pre-pubertal stage longer.[2] It might, however, also have indicated a reluctance to grow into women and be an expression of the desire to remain children as long

1. This would appear to be confirmed by the tendency for European girls to have wished to be born girls and for Maori girls to have wished to be born boys.
2. Aiello and Jones had indicated that different cultures may expect the attainment of adult interpersonal spacing by different ages. If this were the case then the possibility of tactile interaction would have been less threatening as it is accepted as normal behaviour at the earliest developmental stage.

as possible. That this is a feasible hypothesis is indicated by the expressed preference to have been born boys and their conviction shared with the European girls that boys have more opportunities and advantages than girls. The Maori girls' responses may then be explained in terms of the social situation of Maori women. They may have a lower social prestige[1] than their European counterparts and the role expectations made of them may be more rigid. Thus the Maori girls may be indicating their unwillingness to identify with the cultural norms for their sex[2]. Their anxiety about approaching and relating to males (as indicated in the social schemata task where they showed a markedly greater spatial distancing between themselves and a boyfriend and the admired man schemata) may, however, make identification with the opposite sex in terms of overt behaviours prohibitive. Thus, while they may

1. Since the males in Maori society are generally those with mana.
2. Interestingly the one Maori girl who said she would have chosen to be born a girl had been adopted and was brought up by European parents.

express envy of the male, they may nevertheless see no real alternative to the socially expected female role than a retreat into or retention of childhood spatial interaction modes.

It may of course be that the side-by-side seating arrangement is the normal one for women within both cultures. Alternatively it may be the normal seating arrangement for Maori women, whereas European women may no longer have clear/stable spatial expectations made of them. If this were the case, the Maori girls, despite the attitudes expressed by them, may still be demonstrating their adoption of the interactional spacing arrangements expected of them.

A further possibility, based on the fact that the dominant Maori girls selected a side-by-side position, could be that the European girls who selected that particular interactional mode were modelling on their behaviour in order to be more acceptable to their peers.

It certainly seems that whichever of these hypotheses is correct that the seating choice situations at A and B attained a fairly high degree of task clarity. Only one subject (and only once) selected a chair not already at the table, but pulled one up from those situated along the surrounding walls. She placed the chair she moved closer to the peer than the chairs at the table and at an angle of 90^{o}. This behaviour should probably be interpreted in terms of that particular girl's idiosyncratic spatial needs and may be related to other observed idiosyncracies in her responses[1]. It would seem to indicate that providing the individual did not feel compelling personal needs to achieve a different kind of spatial situation the choices provided were compatible with what they considered was expected or what they desired.

1. On two occasions in the schemata tasks she drew herself on top of the figure outline of the other person.

b) Social Schemata Measures

The variation between several of the responses of the Maori and European girls could be understood in a number of different ways. It could be interpreted as follows:-

1. Those tasks where a significant variation in response was demonstrated might represent situations in which the two racial groups had learned different social schemata. In other words, both groups might be applying social schemata (a culturally acquired cognitive structure applicable to specific ambiguous interactional situations) but a cultural difference in spacing might exist. This might mean that in those measures where the girls showed no response variation, both cultures had similar (although not necessarily identical) social schemata.

2. The variation between the two groups in specific situations could be interpreted as implying that at times one group was applying a

social schema whereas the other was basing its response on the affective content of the situation. Those instances where both groups showed a similar response pattern might represent either the utilization of a predominantly affective assessment of the situation by both groups or the implementation of similar social schemata.

3. The variation between the two groups might be the result of one or other group having no culturally prescribed mode of response so that each individual might respond according to her own personal rationale for structuring spatial interactions.

A decision of which of these three interpretations may be the correct one must be related to the other results obtained. While the Maori girls showed greater variation in response (as determined by the standard deviations), their responses in the test/retest conditions showed a greater overall stability except in response to a female stranger (one of the

two measures on which European and Maori girls showed a statistically correlative response). In contrast, the European girls, while exhibiting a fairly low level of variation between individual responses (there were fewer extreme scores), nevertheless demonstrated a far greater inconsistency between the test/retest responses in four out of seven items. Moreover those instances where consistent results were obtained were all in response to a female adult schema[1].

The greater variance in terms of the standard deviation would seem to indicate that the Maori girls may not have necessarily been employing a single social schema. Alternatively they may sometimes have been responding according to the affective content of the situation. Whichever of these interpretations might be correct, the Maori girls nevertheless showed a response consistency over time which would appear

1. Female adult stranger, disliked woman, female member of staff.

to indicate that they had, at least individually, a conceptual (cognitive) framework against which to judge interpersonal situations. The general tendency for European girls to show less response variation both within individual items and to some extent between items, might be interpreted to mean, in conjunction with their response unpredictability, that they did not have a set of culturally acquired social schemata to cope with ambiguous interpersonal situations. Since only a small number of the European girls had been diagnosed as showing sociopathic tendencies this cannot be interpreted as indicating the inability of this group to acquire social schemata. It would seem rather to suggest that the European girls may have grown up in a cultural situation in which no clear socially prescribed interactional distancing norms were available/ operative. This may of course also hold true for the Maori girls as their responses, while showing individual consistency, also show considerable in-group

variation. What we may have demonstrated is not cultural variation in social schemata but cultural variation in modes of coping with a cultural situation in which neither culture has clear/stable interactional distancing norms. This could be understood in terms of both racial groups having been exposed to a variety of spatial norms and all adolescents being in a situation of secondary culture contact[1].

The variation between the response of the Maori and European adolescents is, even if this latter suggestion is correct, of considerable interest and requires further interpretation[2].

It may be explained as follows: The Maori girls may have developed a response consistency in terms of their cultural tradition (such ideas for example as the mana of the male and respect for elders) and in

1. That is, coming from families in which a variety of spacing behaviours were demonstrated; experiencing divergent spatial responses within the community.
2. It might have been thought that if the adolescents lacked culturally defined interactional spacing parameters, they might have attempted to develop ones for the adolescent culture as a whole.

terms of their feelings about other people. Expressed in another way, this may mean that they may have lost communally shared social schemata/interpersonal spacing norms, but may have retained some elements of the cultural rationale which once supported the behavioural responses which were their expressions. There may, moreover, exist a certain conflict between what they consider appropriate in terms of this rationale and what they have experienced as socially comfortable/positively reinforcing. We do not really know the speed at which divergent cultures merge with each other. Nor do we know whether the Maori culture has opted for such an intermingling, although the abandonment of the previous communal life-style must inevitably bring changes simply in terms of living at greater physical distances from members of the extended family. Some of those aspects of the Maori adolescents' interpersonal spacing attitudes, in particular a certain approach reticence, may be

indicative of the conflict between the rationale and the uncertainty experienced in interpersonal encounters. These feelings of hesitancy may have evolved out of the cultural change experienced from being a dominant group to becoming a minority group.

The European girls appeared to control their response in as far as they corrected extreme reactions (or felt no extreme reactions?) and the response made seemed determined by their assessment of the situation at the time and not according to any specific culturally determined spatial distancing norms. This may reflect the fact that the non-Polynesian community as a whole lacks a cultural rationale and therefore responds according to an opportunist logic in interactional situations. Thus the tendency to avoid extreme distances may demonstrate that the European girls' desired to attain the best result from the interpersonal encounter[1].

1. This could possibly include an ingratiation component - i.e. of standing near to be pleasing to the people they like or feel affiliative impulses towards.

The commonly shared spatial responses to female adults may possibly be explained in terms of their common learning experience within the institution. Although there are male staff members, the predominance of female adults (ratio of about 7:1) would allow the girls most opportunity for learning the spatial interaction distancing expected within the institution both for known female adults and female strangers. The response of both groups to a disliked woman would appear to indicate an exclusively affective response (i.e. avoidance). Interestingly a few individual girls indicated that they felt they should not really show their feelings so openly and corrected the affective response to a "normal" interactional distance for a known female adult. This may possibly reflect the re -emergence of social schemata within some areas of society.

c) Sociometric Analysis

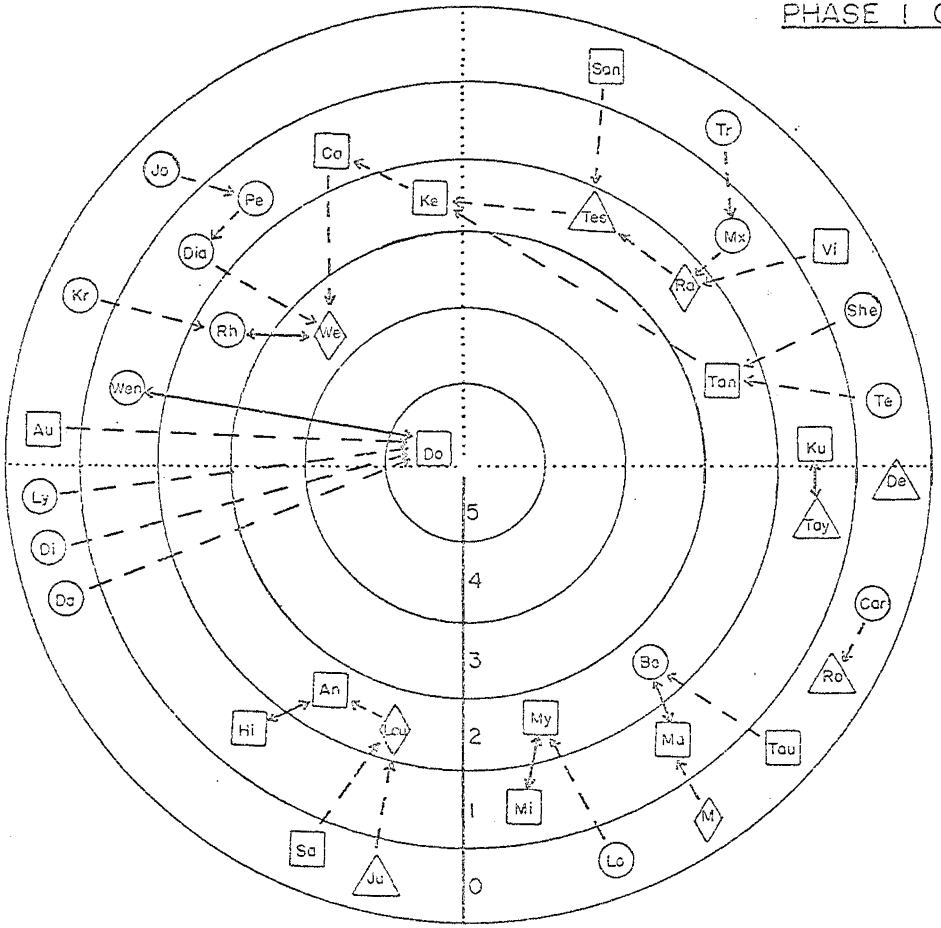
The fairly high level of stability in the peer hierarchy as indicated by the sociometric choices

would suggest that the variation between the responses of the Maori and European girls in other measures may not be attributable to their interpersonal situation within the institution i.e. their overt responses were neither intended to improve their peer standing nor were they a response to it. These conclusions must, however, be treated with a certain caution as there was an indication on one item of the sociometric choices that the Maori and European girls were interactionally in a different situation, with the former group being generally more popular (having a better standing in the peer hierarchy) than the latter. It must, however, also be considered that the interaction between peer status and overt spatial response may act in the opposite direction to that generally expected. More specifically the low peer standing of the European girls may, as has been suggested, be a result of their unpredictability in interactional spacing.

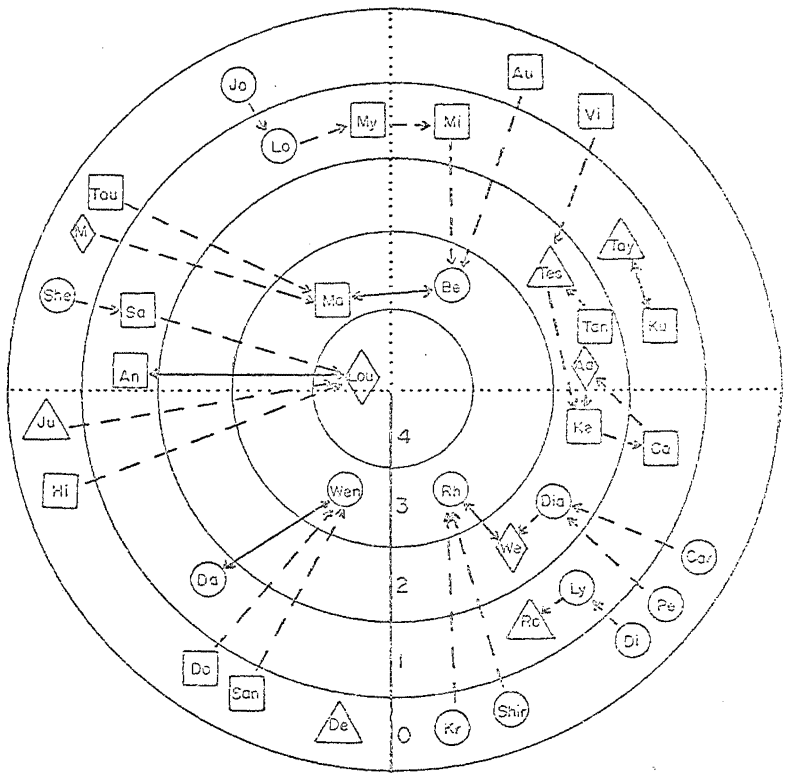
There appeared to be a number of girls who consistently received acceptance/affiliative intentions from peers. It was noted that there appeared to be a disproportionate number of girls belonging to minority groups within New Zealand culture in this situation (Lou - Maori-Samoan-German, Wen - Chinese, Ha - Samoan). This may be attributable either to the attention accorded individuals who are different[1], in that they are more conspicuous members of the community, or to these girls demonstrating (using/enacting) more affiliative behaviours towards their peers. The same girls who were dominant in one particular affiliative choice situation tended to be selected more frequently in other items. When the responses of the girls' recreational and living space choices (first only) were drawn up on a target sociogram (see p.456 and p.457) several things were apparent. First, friendships (affiliative choices) were usually with/for girls living in the same home unit.

1. Although other individuals belonging to minority groups have tended at times to be scape-goated.

FIG. 3: TARGET SOCIOGRAMS DEPICTING INTERPERSONAL ATTRACTIONS FROM THE SOCIOMETRIC ASSESSMENT CARRIED OUT IN PHASE I OF THE EXPERIMENTAL PROCEDURE



I. CHOICES FOR SHARING LIVING SPACE WITH ANOTHER GIRL



II. CHOICES FOR RECREATIONAL ACTIVITY WITH ANOTHER GIRL

⟷ Reciprocated (mutual) choices

– – → Unreciprocated choices (arrow denotes direction of choice)

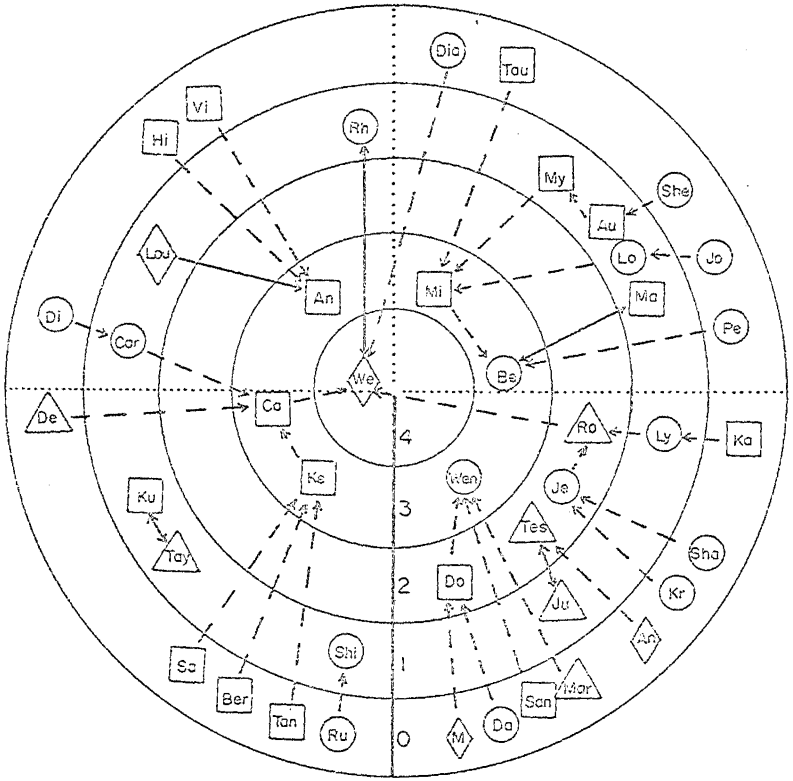
○ European

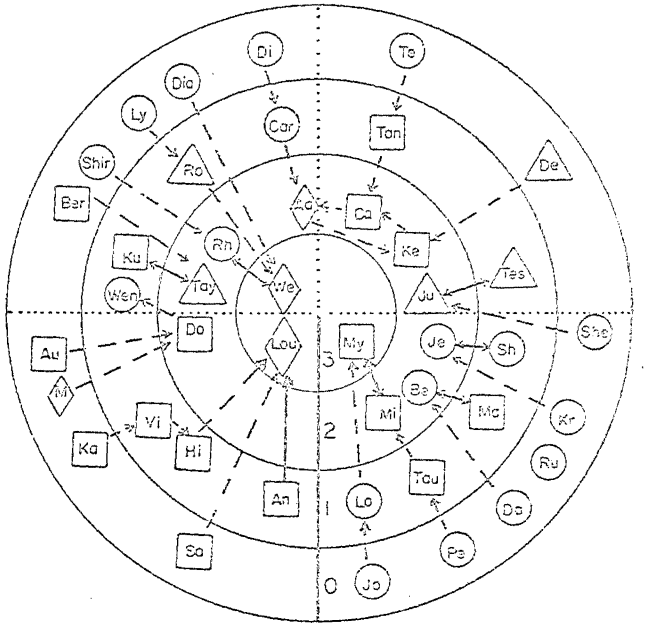
△ Part-Maori

□ Maori

◇ Other (Chinese, Islander, Part-Islander)

FIG. 4: TARGET SOCIOGRAMS DEPICTING INTERPERSONAL ATTRACTIONS FROM THE SOCIOMETRIC ASSESSMENT CARRIED OUT IN PHASE 2 OF THE EXPERIMENTAL PROCEDURE.





I. CHOICES FOR SHARING LIVING SPACE WITH ANOTHER GIRL

⟷ Reciprocated (mutual) choices

– – → Unreciprocated choices (arrow denotes direction of choice)

II. CHOICES FOR RECREATIONAL ACTIVITY WITH ANOTHER GIRL

○ European

□ Maori

△ Part-Maori

◇ Other (Chinese, Islander, Part-Islander)

Secondly there were only a small number of reciprocal choices, although where these occurred they showed stability over time. The choices cut across race and age. The girls who were most extremely rejected by peers were all girls who had come to staff attention for aggravating others (either by continual teasing or rumour spreading), for demonstrating extreme subservience to peers (doing exactly what other girls told them) or for aggression towards other girls. The girls who related well with peers were not necessarily those who related well with adults although some girls exhibited overall a high level of fluency and social confidence (e.g. Wen, Ca, Do). These differences, however, did not find expression in either the space related measures or in the attitudes expressed.

d) Sentence Completion Task and Questionnaires

It was apparent that the majority of the expected relationships were not in fact demonstrated in the responses obtained in this portion of the study. This could be explained in a number of different ways. It might

simply reflect the fact that false assumptions had been made. Alternatively it might mean that the subjects selected for this study were atypical to the extent that their behaviour did not conform to those expectations which had in the main been derived from results gained from normal subject populations. However, the lack of statistically significant relationships could also have resulted from specific methodological inadequacies in the study, in particular the failure to develop measures which were sensitive enough to record such things as self-image. Indeed, it has already been acknowledged, that self-image score may not have significantly tapped the individual's core feelings about her acceptability to herself and to other people. Nevertheless in at least one area an anticipated relationship was established, namely between an individual's previous spatial mobility experiences and her current spatial attitudes. This is particularly interesting as not only was this relationship substantiated despite the lack of other statistically significant

relationships in the data but it may in fact provide some clues as to why the other expected relationships were not validated.

The relationship between having experienced a high level of spatial mobility and the need to have a spatial area of one's own, as well as possibly to select and invest areas of the environment with positive affective content, may be partially explained by a comparison with nomadism. In truly nomadic life styles appropriate perceptual adaptations and psychological accommodations are presumably made to enable individuals to experience a sense of continuity as an individual. This cannot occur in the form it has been suggested is used by individuals who are sedentary, that is by the maintenance of spatial areas on to which are projected feelings/emotions and which are both an extension to and a part of the individual's total identity. In nomadic cultures the individual must either select small, portable objects with which to establish affective bonds (such as jewellery), or must

develop alternative modes of coping with the external reality. It is considered, for example, that strong familial or group bonds might compensate for a lack of ties with physical environmental features. If this were the case, continuity in group membership would be extremely important, particularly as group members would be the stable perceptual feature in a situation of an otherwise high level of perceptual variation[1]. However, it is considered that whichever form of adaptation is selected, any existence mode is only psychologically supporting if there is a cultural[2] rationale which makes the behaviours meaningful. The more potentially stressful the behaviours are, moreover, the more important such a rationale may become.

Considering again the responses of the girls exposed to high levels of spatial mobility, it could be deduced that their territorial behaviour reflected the habitual mode of coping, i.e. as soon as they were placed in a

1. Many nomadic cultures, of course, limit the level of exposure to unfamiliar perceptual stimulation by following known routes to places they have been before.
2. A personal logic for actions may possibly partially compensate for the lack of a cultural rationale.

new situation, they adopted behaviours intended to restore their equilibrium. Such an interpretation may, however, be questioned. It would seem likely that if the girls had developed satisfactory means of coping with spatial mobility, they would not have needed to be placed in an environment which offered consistency and stability. This is not to suggest that the spatial mobility was the cause of their emotional disturbance but to suggest it was a contributing factor in their inability to cope with the circumstances in which they found themselves in the community. It seems probable that our subjects in fact experienced their families' mobility as stressful and threatening (thus the adoption of coping behaviours not really suited to a life-style involving frequent moves). This may of course, have been because the mobility was related to pressures within the family unit, such as marital tensions, which threatened to destroy the family's continuation as a group. In addition the frequent changes of locality may have resulted in a disruption of the ties to the

extended family. If this occurred and if high levels of mobility are compensated for by supportive familial bonds, strains on these bonds, whatever their cause might be, would be disturbing to individual members of the mobile group. This might lead to them compensating for the loss of this mode of identity maintenance by spatial occupation manoeuvres. The adolescents may, however, have experienced the mobility as stressful because for them it lacked a rationale. Thus, while father or mother might need to solve financial difficulties by moving to an area where employment was available, mobility for the children would involve frequent school changes. That frequent school changes cause considerable discomfort and appear punishing is testified to both by comments of the girls and by their school records.

Once the girls who had been exposed to frequent and personally meaningless changes found themselves in a situation in which a fairly lengthy stay was anticipated and in which they had some control over their departure,

they were able to create an environmental spatial situation which was psychically supporting. This spatial occupation behaviour may, moreover, have been promoted by the fact that a moderately high level of instruction was given to girls both about the types of interpersonal behaviour expected and about the spatial freedoms/restrictions within the property. The findings, however, also suggest that girls who have lived in a spatially stable environmental situation may not feel the necessity to particularize and occupy specific areas of that environment. Presumably they could gain enough sense of consistency/sameness/meaning from their environmental 'back-drop' to experience themselves as distinct from it.

There may, however, be another dimension from which these response differences should be considered. When both types of spatial behaviour are viewed in the light of their meaning in terms of the level of perceptual stimulation, the following tentative deductions may be drawn. In terms of perceptual stimulation, excessive

spatial mobility had presumably involved the girls in coping with high levels of novel stimuli. One of the obvious results of maintaining a particular spatial area as their own would be to guarantee at least one area within the environment where the stimulation level would be known, familiar and under their control. Thus the behaviour of those girls seeking to occupy specific spatial areas may have resulted from their need to reduce the level of perceptual stimulation to which they were exposed. Thus, while researchers have stressed the importance of variation within the perceptual environment, the results of our study would suggest that there may well be an upper limit beyond which perceptual stimulation can be as disruptive and disintegrating of an individual's identity as perceptual deprivation. When the behaviour of the girls who had been subjected to considerable spatial mobility is compared with that of girls who had experienced little change in their family's place of residence then the response of this latter group may reflect their need for a greater degree of perceptual

stimulation. This may explain too why many of those girls who had never moved in their lifetime were keen to share a bedroom, for this would guarantee a situation of on-going stimulation.

One might still wonder, if the reasoning so far is correct, why those subjects who wanted individual bedroom space and used territorial occupation behaviours did not show variance in their self-image statements from the other group. There may be several reasons for this. In the first place the kind of feelings which the girls showed in those sentence completion items intended to tap self-image, tended to be self-assessments in regard to such dimensions as beautiful/ugly, mood levels (sad/happy) or somatic feelings (tired/energetic). They did not really touch on the degree of integration felt. Even if they had, however, it seems likely that spatially mobile subjects may not have shown any difference in their responses from the other group. The reason for this postulation is quite straightforward. All girls in the study had an individual bedroom space and many of those

who needed to particularize specific areas in addition to having a bedroom space of their own, appear to have done so[1]. Thus they may well have been able to restore at least to some degree, their disrupted/ disintegrated sense of wholeness and identity.

There is a second reason for thinking that self-image results may not have significantly reflected the subjects' sense of integration. It was apparent from the results that a high proportion of the girls had a low self-image score or at least very ambivalent feelings towards themselves. It is suggested that the particular self-image content obtained in this study were the girls' feelings about themselves in relation to other people. More specifically they tended to assess themselves in categories which would make them acceptable or unacceptable to other people. This may reflect that intellectual capacity first attained in adolescence to be able to stand

1. From the lesser degree of relationship shown between those preferring an individual bedroom and those also utilizing territorial occupation, it may be surmised that some individuals were unable to support their identity in the latter way.

outside oneself and see oneself as others see one. Indeed it has been suggested that adolescents may be sensitive to the imagined audience to such an extent that they experience themselves as constantly under inspection. Now, when this is related to another aspect of adolescent intellectual development which is the ability to begin to see things in terms of what might have been and is not and the tendency initially at least for this to lead to young people seeing things in extremes and absolutes, the low self-image may reflect their realization of their failure to meet the ideals of beauty, intelligence, happiness, etc. While it is not disputed that the actual self-image[1] of this particular group of adolescents may also be affected by guilt feelings and by the stigmatisation and rejection they have experienced, it is considered that the measures chosen may not have touched these but rather may have touched on more general adolescent self-reflective

1. It is considered that this study probably failed to tap the actual or composite self-image.

attitudes. It therefore seems possible that adolescents in general might demonstrate a similar level of ambivalence/negative self feelings and the few positive responses recorded in this study may reflect either the intellectual immaturity of those particular subjects or the attainment of a more balanced conceptual framework. This kind of reasoning may equally well hold true for the responses indicating the girls' relationships with their parents. It seems likely that the ambivalent responses may indicate the attainment of the realization that one can love and hate/be angry at the same person. Since all subjects had been out of their parents' control or the parent(s) had asked for help in bringing up their child, it was expected that all girls would have mixed feelings towards their parents. Consequently those responses which were exclusively positive or negative might reflect either the young person's inability to cope with these mixed feelings or that she had not reached the stage of intellectual maturity which enabled her to integrate her feelings of goodness

and badness about one person. If the response was dictated by an intellectual maturity which had not yet been attained, then this might explain why there was no relationship found between these responses, self-image score and the wish to have been born either a boy or a girl[1].

Another interesting and rather unexpected finding was the lack of relationship between expressed self-image and approach willingness or reticence. One might have anticipated that subjects who felt they were unacceptable to other people[2] or who felt vulnerable in their identity might have shown more reticence about initiating interactions than those who had attained some measure of self-acceptance and self-confidence. Admittedly this study may not have decisively touched on these aspects of the self-image. It did, however, appear from the variations in attitudes shown in the results, that

1. A relationship might have been anticipated on the basis of the process of identification.
2. This would presumably be those who considered they were ugly or bad. There would not necessarily be a spatial distancing by those who saw themselves as sad or depressed.

a more important consideration when deciding whether or not to approach someone was whether the subjects felt the initiation of contact was appropriate. Thus several of the Maori girls indicated that they would not approach a crying child because the mother might wonder what they were doing and be angry with them[1]. There may also be a certain cultural restraint evident in the Maori girls' reluctance to approach an old person whom they did not already know. An old person and a child had been selected as approach targets as it was considered that they would be relatively less threatening than adults. While this, however, appeared correct for European girls, it seemed that the Maori adolescents, possibly because of the respect accorded old people within their culture, found the task even on an imaginary level more arousing. There may be a further explaination for the difference in attitude. It may mean that those who expressed approach reticence had had less positively re-

1. Their reluctance to approach could not be interpreted as an avoidance of children as they expressed empathy with the child, e.g. they said they felt sorry for the child, knew how it felt, etc.

inforcing experiences as the result of self-initiated interactions. It is apparent that the difference between approaching a person one knows and one whom one does not know is that in the former instance one can predict with a fairly high level of accuracy the type of response one will receive. When one considers that the majority of the girls who showed approach reticence were Maori, it may mean that they have experienced more social rejection[1] or cannot anticipate as well as the European girls what kind of response they will evoke by approaching a stranger[2].

The importance of a person's affective state when approached was demonstrated by the fact that nearly all subjects stated that they rejected tactile interaction when angry or in a bad mood. This may mean that exposure to spatial closeness, i.e. where tactility is possible although not necessarily going to occur, may, if a subject

1. This could be a result of negative projections on to Maoris as a minority group.
2. They might, however, only be more sensitive to the possible negative consequences of an interaction which the other person might not want.

is in a negative affect state, evoke further negative feelings, although not necessarily an overt expression of them. It was also found that when individuals imagined themselves to be in a state of relative equilibrium an unannounced and unexpected tactile interaction might still elicit negative emotions. These might, however, find expression in a variety of behaviours ranging from overt demonstrations of aggression to flight reactions. Some subjects indicated that they would control their response until the other person had explained their behaviour. This would seem to indicate that while spatial intimacy does not necessarily need clarification by other intermediary interactional behaviours[1], tactile interaction does as far as the expectations of both our Maori and European subjects were concerned.

e) <u>The Meaning of Results in Terms of Interrelationships Between Them</u>

We shall begin by summarizing the overall difference recorded in the responses of our two groups. It was

1. These would presumably equate with 'meta-communications'.

apparent that those areas in which the Maori and European girls showed significant spatial differences were in interactional settings. When either the spatial attitude or the overt spatial behaviour involved a situational assessment in terms of another person, variations between the two groups were demonstrated. When, however, the spatial attitudes/overt spatial responses of subjects were in relation to environmental contingencies, no significant cultural difference was obtained. Instead, where variations occurred, they appeared to be attributable to divergency in previous spatial experience.

We had anticipated in our theorizing that spatial responses might be integrated in a single unified framework around a space concept. This was not, however, what the findings indicated. They suggested instead that there might be a set of responses for environmental space, in which the individual did not appear to experience cultural response expectations[1]. Where this was

1. For example, the subjects did not appear to feel that they should or should not want a separate bedroom, should or should not have a favourite place.

so, the subjects' response to the environment appeared designed to meet their individual needs. These needs might result from their environmental insecurity and the concomitant desire to uphold their sense of well-being by the emotional investment in areas of environmental space. There appeared, however, to be cultural pressures experienced to some extent at least, in the response to other people. Here subjects demonstrated much greater self-awareness and self-correction and showed that they felt that social forces required them to behave in specific ways, even where they were unsure what these expected responses might be.

It appeared, although this was not conclusively demonstrated by our limited study that the conformity to social expectations dominated over meeting personal needs through the environmental possibilities of a situation. For example, with one exception, all subjects responded to the seating decision task in terms of the framework provided. If some subjects showed uncertainty or discomfort they did not cope with this in terms of

environmental space. No subject having received the paper-and-pencil task removed herself to another area of the room, although other chairs were available. For some subjects this might indeed have been a more comfortable/less arousing way of coping with the interpersonal situation[1]. It seemed, however, that the social constraints of the situation involving an interaction with other people prohibited the subjects from easing their tension by spatial distancing. Instead they had to cope with their arousal by other means which were socially acceptable (talking, laughing, possibly through seeking close spatial proximity). It may be postulated that the only situations in which the girls might have felt free to respond in terms of implementing the spatial dimensions of the situation for their emotional comfort or for the restoration of their intrapsychic equilibrium, would be if they had felt that no interaction was required[2] or if another person had behaved in a

1. This would probably be true for those girls who had difficulty in relating to their peers or who evoked hostility and scapegoating.
2. This type of assessment of the situation might have been induced if we had not used normal social greetings.

spatially inappropriate way towards them[1].

The above may be related to situation clarity. In a variety of situations in urban areas or in communities[2] an individual must decide whether or not to respond to the presence of other people. While people are, it has been suggested, always aware of the presence of other people, not all situations in which other people are present are interactional situations requiring some kind of interpersonal encounter. Thus it seems likely that the initial assessment in any situation, in public areas in particular, will involve deciding whether the situation involves an interaction or not. If a person decides that there are no compelling social constraints to encounter the other people in the situation he can presumably then respond to the spatial parameters of

1. It would have been possible for example to arrange for one of the assistants to approach the subject at a closer distance than they would have normally expected.
2. That is, in situations of high population density.

of the environment according to his own personal needs and inclinations. These may possibly vary over time, although it is thought that individuals may have specific likings and dislikings in spatial situations and will respond as determined by these. If, however, the situation is assessed as requiring some kind of interactional response, then the individual will utilize culturally acquired social schemata or should he lack these, he will respond to the other person/people as he feels appropriate. Appropriateness, it seems, may in this latter case be either according to a set of stable ideas about types[1] of other people or according to momentary feelings.

1. The kind of response meant was demonstrated by the subjects who commented: 'I always keep away from men', 'I like children', etc.

6.ii. RELATIONSHIP OF RESULTS TO SPATIAL BEHAVIOURAL THEORIES

As has been emphasised throughout the theoretical sections of this study, there is no single comprehensive theory which explains the variety of spatial behaviours reported in the literature. The results obtained in this study will therefore be discussed in relation to the various areas into which the previous discussion of spatial behaviours was divided. We shall start with a discussion of the cultural dimension of this study.

The results obtained from the overt spatial measure (seating choice) and the Kuethe-type schemata task showed statistically significant variation between the responses of the Maori and European girls. This difference occurred despite the fact that all subjects in the study had spent a large proportion of their lives in urban areas, had been exposed to experiences of the spatial behaviours of both their own racial group and that of the other group and nearly all came from families in the lower socio-economic

bracket. Despite this apparent uniformity of social and living-space background, our results did not conform to the suggestions that the trend may be for subjects belonging to the lower socio-economic strata and exposed to high density to show comparable interpersonal spacing responses irrespective of their racial/cultural identity. One possible reason for this may be that the spatial density to which both groups of our subjects had been exposed had not been great enough to affect interactional spacing behaviours. Many of our subjects came from state housing areas, the significant characteristic of which may be their lack of meaningful social groups and freetime activities rather than of actual physical space. Nevertheless it was true that the majority of our subjects had been used to sharing living-space (including shared bedroom space). This may therefore mean that what has apparently been observed in some strata of the American population is an endeavour to develop a new set of interpersonal distancing norms which are meaningful to that group as a whole, i.e. the similarity in spatial behaviour may reflect an attempt

to support a common identity and to produce a shared rationale, rather than be a response to the spatial dimensions of the environmental situation. In contrast our groups' variation in behaviour appears to be attributable to culturally distinctive ways of coping with interactional spacing. This, it has been suggested, may be explained in terms of the Maori girls still having some awareness of the cultural rationale which determined their cultural group's interpersonal spacing (possibly dating back to the time prior to the arrival of the non-Polynesian settlers). In this context it would be interesting to investigate whether the American Indian tribes, as the original settlers of the American continent and who are therefore in terms of their cultural experiences in a more comparable situation to the New Zealand Maori, also show a significant variation in interpersonal spacing which may be related to their cultural logic.

There are, however, indications in our study, although these would need to be investigated further to establish

whether this were really so, that as suggested both in terms of the evolution of regional non-verbal behaviours in America and the ability of hard-of-hearing children to modify their interpersonal spacing, that exposure to a stable set of expectations and interpretations of interactional situations may lead to the development of communally appropriate spatial behaviours.

From a developmental viewpoint the behaviours observed may have been indicative of the retention of childhood interactional spacing norms. Interestingly however, neither in spatial attitudes[1] nor in overt behaviours did the subjects react as a group of adolescents. They showed no pronounced cohesion[2] as a group and no clear awareness of reasons for interpersonal behaviour which could be attributable to their sense of belonging to a distinctive intermediary social unit of 'teenagers' or

1. It was thought that the adolescent sub-culture might have had its own rationale for behaviour and that teenagers as a whole, irrespective of racial and cultural identity might have a uniformity in response to interpersonal spacing tasks.
2. For example, in the schemata task the girls placed the figure representing themselves closer to children and known adults than to girlfriends. If there was a strong cohesion between adolescents as a group, one might have expected this to be reflected in spatial closeness to other members of the group.

'adolescents'. This may mean a variety of different things. It may simply reflect the desire of our subjects to remain children. There are, however, aspects of their overall behaviour which suggest that this is probably not the case. The majority of the girls strongly wished to complete their schooling and gain financial independence. While most wished to return to become a part of their families again, many indicated that they were aware that they would probably have to live independently in the foreseeable future. Thus the lack of a strong sense of being part of an adolescent sub-culture may have reflected our subjects' awareness of being compelled or wanting to adopt and identify with adult behaviours. Two further aspects which may have contributed to our subjects' demonstration of an awareness only of childhood and adulthood expectations and behaviours were that none of the group saw themselves as going on to tertiary education[1] and most saw sixteen as a

1. Although some did plan to involve themselves in vocational training.

turning point as far as protection under the law was concerned[1]. A further possibility, although admittedly rather speculative, is that our particular subjects' experience of a period of separation and special preparation for a return to society may have equated with the significant aspects of initiation procedures. If this were the case our subjects may have seen their lives in terms of, prior to institution admission = childhood, return to the community = adulthood[2]. A much simpler explanation of the failure of our results to show any awareness of an adolescent sub-culture is that within New Zealand society the concept of adolescence may be less potent than say in Switzerland. This is not to deny the influence of the adolescent peer group on peer behaviours but is to suggest that there may not be a strong culturally-required intervening adolescent phase.

1. They were aware that once they were sixteen they could have a criminal record and that at sixteen they were considered as adults as far as the legality of sexual intercourse was concerned. For many of the girls fifteen was also a legally important age as they were no longer compelled to attend school.
2. This may have been promoted by the institution policy not to discharge girls until they had completed their schooling.

The subjects showed an awareness of the types of spatial response meanings which have been noted in studies of the interpersonal dimensions of spatial behaviour. When asked to respond to a disliked female nearly all subjects reacted by showing the figure representing themselves at a greater spatial distance than in other schemata tasks. Some, indeed, placed themselves as far away from the other figure as the paper allowed. It was also found that those who rejected physical contact with a boy-friend in the sentence completion task or expressed negative feelings towards males, also placed themselves at a greater distance from the boy-friend figure in the schemata task. It appeared from some subjects' comments that nearness may however, have other meanings apart from affiliation. In response to the child schema nearness appeared from explanations given, to be related to taking responsibility for the child.[1] This may in fact represent a parent-child schema where close proximity would be indicative

1. Some subjects ommented that they wanted to be close enough to hold the child's hand so that it could not come to any harm.

(with small children at least) of a positive bond and good parenting. If this is the case, the response of subjects to the female staff member may also conform to a parent-child schema rather than to a simple affiliative model/interpretation. A distancing from the adult parent substitute figure in adolescence must presumably be interpreted with some caution. It may either be a demonstration of negative feelings towards the adult, or, however, since an aspect of growing up in New Zealand culture involves the acquisition of financial, social and spatial independence, it may reflect girls' attempts to become self-sufficient and independent.

There was little in this study to support the 'personal space' concept, if by it is meant the maintenance at all times of an area of space around an individual's body. There were, however, indications that certain conditions must be met for a person to allow another to move up to them. It appears that one needs to be aware of the intentions of the other person except possibly in the case of small children. It would seem that if an

older person assumes responsibility for a small child, she will touch it and pick it up even if she has not previously known it. It may be surmised from this that small children, even if not known, will be tolerated at close physical proximity.

The finding of a statistically significant relationship between spatial mobility and what would, in terms of the types of definition used, equate with territorial behaviour provides a new dimension to the studies dealing with territoriality. If the results gained from a small subject population in this study can be shown to hold good for a wider subject population, we may have isolated one of the variables which had predictive validity in future hypothesis generation.

6.iii. RELATIONSHIP OF RESULTS TO PROPOSED HYPOTHESIS AND REFORMULATION OF HYPOTHESIS

While some aspects of the original hypothesis were supported by the research findings, other parts of it were not. It is this which must now be discussed. It was not possible to demonstrate conclusively that the experimental situation was not perceived differentially by the two groups. Nevertheless, there are several reasons for suggesting that the variation in response was not attributable to the two cultural groups having attended to divergent perceptual elements in the experimental environment. In the first place neither group gave any indication of uncertainty in the seating choice situation and both appeared to respond in terms of the task definition of the environmental set. While stimulus clarity cannot be directly equated with identical perception of the total stimulus configuration, it does remove the suggestion of one or other group being uncertain as to how to interpret the interactional

situation. In the second place, there was no pronounced response variation between the first and second phases of the study to suggest that one or other group was more or less sensitive to stimulus novelty. Of course, one of the reasons for carrying out the experimental tasks within a familiar environment was the aim of removing "interference" from unfamiliar environmental stimuli. Nevertheless, the chair-table arrangement in the experimental situation was in the first phase of the study different from the usual furniture arrangement of the room and therefore novel. There was nothing, however, to suggest that this level of perceptual novelty significantly affected the responses of subjects. Thirdly, while the possibility cannot be excluded that environmental variables in the experimental situation evoked a variation in stimulus intensity for Maori and European girls, when the result of the task involving overt spatial behaviours was related to the other results, it appeared more likely that the variation might be attributable to divergent culture-specific feelings about

behaviour appropriate to particular interpersonal situations. In other words, the difference in response appeared more closely related to internal cognitive and affective variables[1] than to environmental variables operative in the experimental situation. This is not to decisively exclude the impact of the total environmental stimulus configuration but simply to suggest that in this particular study the internalized factors determining interpersonal response took precedence over them.

The hypothesis of a conceptual or cognitive unity which would relate the meanings of spatial responses to an idea of space proved to be unsupported by our findings. This may be because the hypothesis was incorrect or because it was inappropriate for the two cultures selected for study who shared the same set of linguistic concepts.

1. These were called the antecedent variables or the historical reactional background in the original formulation of the hypothesis.
2. All subjects spoke English and none of the Maori girls knew more than a few words of the Maori language.

Certain conceptual and linguistic conditions may need to be met for a rationale of spatial behaviours to have evolved which includes both responses to other human beings and to environmental features. To expand on this further, a single conceptual framework for all types of spatial response would necessitate that the meanings given to interactions with environmental areas be congruent with the meanings given to interpersonal spacing. This would, it is thought, involve the idea that the environment is alive/animated either because conceptually that possibility is admitted, or because it is considered to be occupied by spirits. Once, however, that belief is a part of the cultural rationale, then areas of space may be avoided because they are bad/evil/disliked or approached to the point of seeking tactile intimacy (such as kissing the earth). This is not to deny that individuals in cultures which do not share such a conceptual framework may personally (by projection) experience spatial areas as animated. There are, however, no cultural constraints to respond towards the environment as one would towards other people.

Despite this aspect of our original hypothesis being disproved in relation to the responses of the subjects of this particular study, some components of the internal variables considered to affect the overt spatial response were confirmed. It was apparent that the Maori girls' responses at least were influenced by cultural expectations. It was also found that at least one factor in a person's previous spatial history, namely her experience of spatial mobility, might determine her later space occupation behaviour. It was not, however, possible to demonstrate in this study response variations which could be attributed to personality factors, although it was thought that subjects who had no awareness of culturally prescribed behaviours or who found themselves in situations involving a spatial choice for which there were no social norms or response expectations, based their decision on personal needs/ preferences.

The major area in which the original hypothesis needs to be reformulated is not in respect to the factors considered to influence the overt spatial response,

but in terms of the hierarchy in which these factors appear to stand. Thus while a relative equality of influence was anticipated, this was shown to be incorrect. The dominant factors determining interpersonal spacing appeared to be, in this order, cultural/habitual response pattern, response willingness and response cost. It appeared that only when a subject experienced an interaction for which she was neither prepared nor which conformed with socially appropriate interpersonal behaviour did she allow herself to respond according to a flight-fight reaction. In assessments of environmental possibilities which did not implicate an interactional component, subjects seemed to respond more exclusively in terms of their response willingness (based on anticipated positive reinforcement), although it seems likely that they were not un- aware of the response cost. Only one subject of all those who said they had a favourite place contravened the spatial regulations of the institution.[1]

1. Her favourite place was in one of the old buildings condemned as an earthquake risk and consequently out-of-bounds for the girls.

It is not possible to say with certainty that the variations between the two groups could not be attributable to divergent use of other non-verbal responses. It does, however, seem possible to explain the variations without employing this explanation.

6.iv. THE POSSIBLE CROSS-CULTURAL SIGNIFICANCE OF THE FINDINGS

If the response variation found in the interpersonal distancing of the Maori and European girls in this study can be shown to apply to the Maori and European population of teenage girls as a whole(or even to the adult female population at large), then the results of this study may have implications for race relations in New Zealand. One of the important consequences of cultural variations in interactional spatial distancing is of course when the two cultures must interact with each other. Let us assume for a moment then that the responses are representative of the responses of Maori and European girls as a whole and follow the implications of this in terms of

a racially integrated society. The deductions will be particularly significant if the two cultures as a whole vary in the way suggested, namely that the Maoris still retain some sense of a cultural rationale for their individual spatial responses, whereas the Europeans in New Zealand lack a unified cultural logic and assess situations in terms of the most personally reinforcing spatial distance they can achieve with the minimum of response cost.

It was apparent in this study that the Maori girls maintained greater distances overall in the schemata tasks and a higher degree of approach reticence than the Europeans. However, both groups interpreted larger spatial distances as unfriendly. This may lead to the interpersonal spatial behaviour of the Maori girls being interpreted by Europeans as standoffish, indicative of their desire to remain socially and culturally isolated or even hostile. Since the responses may nevertheless represent distances which balance the Maori girls' arousal level with their affiliative impulses (rather than

reflect their disassociative impulses), attempts to interact at spatial distances which are more comfortable for Europeans may produce considerable discomfort, possibly leading to retreat or aggression. This may well lead to the formulation by Europeans of such stereotypic material as 'Maori girls are shy' or 'Maori girls are rejecting or aggressive when Europeans are friendly to them'.

The results of this study suggest, however, that a compromise situation may be achieved by a better understanding of the Maori girls spatial distancing needs and their spatial tolerance. Since Maori girls appear to derive comfort from a side-by-side interactional position which involves a lesser degree of eye contact, at least as far as interaction with other females is concerned, an approach by Europeans from angles to the side of the Maori girls may allow them to stand closer without negative reactions, providing the frontal encounter is not sought once the approach has been made. It is evident that this type of sensitivity to another

cultural group's spatial tolerance may be extremely important in situations which are in any case threatening. For example the approach of a male policemen or a school teacher instantly becomes a confrontation situation if the interpersonal spatial vulnerability of the Maori girl is not understood and that person does not stop at a greater distance than he would if interacting with a European girl.

The European girls, however, are vulnerable in a different way because of their greater tolerance of interpersonal spatial proximity. Since close physical proximity is interpreted as friendly then such behaviour may be understood as an invitation to become more intimate. The European girls tended to show less ability to handle unexpected or unwanted tactile interaction, so that their passivity might be read too as acceptance of the interaction rather than as their being frightened. This would leave the European girls in a much more vulnerable situation as far as interactions

leading to sexual intimacy were concerned. Since they have, however, no clear guidelines for appropriate social interactional distances beyond their feelings at the time and their assessment of the spatial situation in terms of what will be most beneficial[1], they may have difficulty in establishing on-going relationships as their behaviours cannot be taken as indicators of their overall feelings and intentions. This could result in their one time spatially near (interpreted as friendly), one time spatially distant (interpreted as dislike) responses arousing resentment in those who were trying to establish relationships with them and lead to a subsequent rejection. Moreover in situations which involve encounters with authority figures the European girls' selection and preference for close spatial distancing together with a more frequent use of an eye-to-eye interactional situation may be interpreted as disrespectful or cheeky.

1. This may mean an assessment in terms of what will be positively reinforcing to them or what may be pleasing and acceptable to the other person.

That the consequences of the interpersonal spatial response variation of the Maori and European indicated above may have some validity is suggested from the findings of a follow-up study of seventy-five girls who had left the institutional environment 6-24 months prior to December, 1975. While there was a much greater predominance of Maori girls in this subject population, those who had had babies or were pregnant were nearly all European, whereas the small number who had been involved with the law and had either been placed on probation or sent to borstal were predominantly Maori. Of course interpersonal spacing is unlikely to be the the exclusive reason for these findings but it may be suggested that different types of spatial need may lead to different social consequences for individuals who are finding it difficult to cope with their environmental situation in the first place.

6.v. SUGGESTIONS FOR FURTHER RESEARCH

If this particular study may have failed to demonstrate conclusively which of the various interpretations given for specific attitudes or behavioural items was correct, it is considered that it may still have made a significant contribution in suggesting a new line of approach for research into spatial behaviours. While there can be no doubt that the research area urgently needs the collection of more data, the results of this study indicate that the collation of behavioural observations which ignore the reasons and explanations given by people for their behaviour may be just as unbalanced and inadequate an approach as a study of the rationale without observations in the natural environment. Moreover, this study indicates too the importance of knowing about subjects' past spatial experiences. For, while these may not always be an active influence on spatial behaviours, the study isolated one way at least in which they can determine response. Since the consideration of the spatial history of the subject is a dimension which

has not really been afforded attention in the previous research carried out, there may well prove to be other instances in which this set of variables exerts a decisive direction on the overt spatial response. This could therefore clearly be a worthwhile area for further investigation.

In the theoretical section of this study, the suggestion that a cross-cultural approach to spatial behaviours offers one of the most productive methods for advancing our understanding in this area was supported. The results of this study which applied a cross-cultural comparison in a common environment would appear to vindicate this support. It is not enough to observe how subjects behave under specific sets of conditions. If inter-personal spacing is determined by some kind of culturally-shared set of expectations and attitudes, then the isolation of them should be an integral part of the research. This particular study did not develop methodological tools which gave a broad enough spectrum of cultural expectations and/or personal motivation

behind spatial attitudes and behaviour. Consequently many of the deductions made had a fairly speculative character. The development of an instrument to research the cultural rationale does not, however, appear an insurmountable task. What would seem to be needed would be as follows: subjects would need to be asked to indicate their response (imagined) in a variety of different situations involving a diversity of different age groups of anticipated interaction partners. This data, once collected, would provide a basis for making predictions about interpersonal spacing which could then be tested by observing subjects in actual life situations. While it might be argued that subjects might well become sensitized to what was being observed, if individuals really have an integrated logic which determines their responses to other people, this is unlikely to be disrupted by observation , as whenever other human beings are present and interacted with, responses are always to some extent under observation. The above approach could, moreover,

be carried out most effectively by pursuing the investigation as a comparative study.

It seems likely that certain conditions must be met for a valid cross-cultural approach to spatial behaviours. First, subjects need to share a common environment and as far as possible experience the same spatial conditions within that environment. There would be quite a variety of subject populations who might fulfil these requirements; one could study as divergent a range of situations as the spatial behaviours of members of different cultural groups employed by large industrial concerns who also provide staff housing, to tribal groups living within the same geographic region and utilizing the same existence form. If, however, variation between groups is found, which can neither be explained in terms of the environmental contingencies nor can be attributed to a variation in culturally prescribed responses for particular situations, an alternative approach may be needed.

This leads on to the whole question of the process by which a cultural rationale for interpersonal behaviours is developed, how these change if the cultural situation changes and how the impact of the spatial behaviours

norms of other cultural groups affects it. This study has proposed a theory of culture which includes the proposition that the loss both of a cultural rationale and of culturally-prescribed spatial behaviours can occur. It is acknowledged that this theory is not a very common one, for most researchers appear to anticipate that people cannot ever be without some culture. It does nevertheless seem, both from the reasoning in the theoretical portion of this study and from the results of the research carried out, that this is a viable theoretical premise. If this is so, then, as suggested previously, cross-cultural comparison needs to be made between cultures who have experienced similar pressures from other cultural groups. This may lead to indications as to whether there are phases in the loss of meaning of a cultural rationale as well as indicating the types of adaptation which may be a result of that loss.

7. CONCLUSIONS

In some ways this study achieved less than had been hoped in others more than anticipated. Undoubtedly one of the pertinent lessons was that the questions one asks may well determine what one will find. By this is meant that we are not yet in a position to decide beforehand where significant relationships exist. This can lead both to asking the wrong questions and failing to ask the right ones. Moreover, it is possible that some of the theoretical models which have been offered to explain spatial behaviours may be inadequate or fallacious, so that hypothesis generation on the basis of them may prove a fairly fruitless exercise. This need not, however, be a cause for despair. It has already been indicated that there are areas for research related to spatial behaviours which have barely been touched upon. It is undoubtedly the consistent investigation of these which may provide the basis for more comprehensive hypothesis formulation. This will in turn allow the

selection of more precise areas for examination.

If this study was in some ways too ambitious in its goals and too aware of the multitude of possible meanings of the results obtained, it did at least produce results which suggest areas for further profitable research. Perhaps two of the more significant contributions of this type were first, the suggestion that to investigate various types of spatial response to environmental contingencies, one may need to observe behaviours in situations where interaction is not socially expected and secondly, the indication that such environmental responses may be influenced by previous spatial experiences such as mobility. While both of these suggestions now need to be verified on a wider scale and with other, less atypical subject populations, if they are substantiated by subsequent research, they may lead to relationships which will allow predictions about future spatial behaviour to be made. This would be of considerable significance as it would begin to provide the conceptual bridge between the intimations that human

beings have specific spatial needs and some means of determining what these were. In the long term it could also lead to a better understanding of the psychological mechanisms which find satisfaction in particular spatial responses.

A cross-cultural variation was found in interpersonal spacing behaviour and in attitudes towards approaching other people. This somewhat surprising result certainly has important implications for the institution staff working with the girls. It may, however, as suggested, also have a wider meaning in terms of the difficulties which may occur when the two cultures with their divergent interpersonal spacing norms encounter each other. While a gradual transition to a commonly shared set of socially-appropriate distances might be desirable for maintaining racial harmony, there are reasons for thinking this will not occur. Where modifications of interpersonal spacing have been observed, the direction of the change has been towards the behaviour which had the greater social prestige. If, as postulated, the situation in New Zealand is one of a

racial minority group holding the more stable set of interpersonal spacing norms or at least the retention of some reason for specific interactional behaviours, a transition in that direction appears improbable. Not only do they have less social prestige but the acceptance of minority group behaviours by the racial majority might evoke fears in the latter that they might be increasing the Maoris' prestige. The minority group may, however, in its turn need its distinctive interpersonal spacing to retain its cultural identity and might find the adoption of its behaviours by the Europeans equally threatening. It appears likely then, that at least in terms of interpersonal spacing behaviours, the two cultural groups may continue to co-exist rather than show a progressive intermingling. If other research findings confirm the conclusions drawn here, then one possible means of creating a better understanding in New Zealand's multi-racial society would be to make the various racial groups aware of each other's divergent spatial needs and the meaning of their spatial expressions.

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Appendix I Measures used

Appendix II Schemata results in full

Appendix III Tables A - E

Abbreviations

? don't know

\- not given this question

N/A not applicable

n.a. no answer

n.s. not significant

aggr. aggression by father referred to

ambiv. ambivalent response

av. average

bes. beside

diag. diagonal

est. estimated

opp. opposite

signif. significant

Schemata Results

M1 response to girlfriend schema

M2 response to child schema

M3 response to female stranger schema

M4 response to admired man schema

M5 response to disliked female schema

M6 response to boyfriend schema

M7 response to female staff member schema

Copy of Sentence Completion Task

This is not a test. All that is required is that you complete each sentence with a few words about how you feel. If you feel unable to complete any sentence leave it and come back to it at the end. Try and do all sentences if you possibly can. The purpose of the questionnaire is to find out how teenagers feel about things. Where the alternative brother/sister appears, cross out whichever does not apply. If you are an only child, write this beside the questions involving brother/sister.

If my mother puts her arm around me

My body feels

When I look in the mirror

If my brother/sister starts to get angry

If I see a small child crying

If a stranger puts his hand on my shoulder

I think my eyes show

When I was small, my father

The nicest thing about my brother/sister is

If I see an old person carrying a heavy parcel, I

When I visit anyone sick, I feel

When I am old, I shall

When I feel lonely, I wish that

If I had a child of my own, I would

If my boyfriend puts his arm around me, I feel

My hair feels

I do not like people to touch me when

I should like to become

My favourite sport is

My hands feel

Copy of

Questionnaire 1

Where were you born (which town) ?

How many times have you moved house in your lifetime ?

Where would you like to live in future ?

Have you ever shared a bedroom with a brother or sister ?

Do you like having a bedroom of your own or would you prefer to share one ?

Do your parents have separate bedrooms or a shared one ?

Do you have a favourite place at Kingslea (room/chair/place in the grounds) ?

How do you like to spend school breaks (in library/ in classroom/ in time-out room/ in playground/ wandering) ?

Would you like there to be a comfortable room you could go to when you wanted to be alone ?

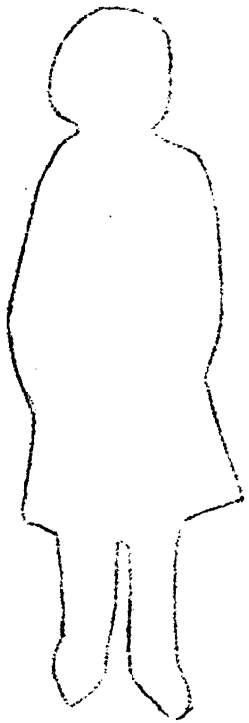
Would you like there to be a place (room) where adults could not go without permission but you could ?

Copy of

Questionnaire 2 (Sexual identity)

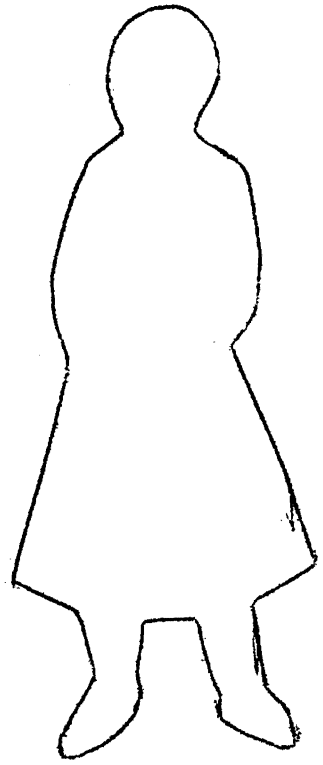
	CIRCLE THE ANSWER YOU AGREE WITH
1. When you feel sad would you rather be with other people or on your own ?	WITH PEOPLE/ ON OWN
2. If you had been able to choose, would you have wanted to be born a boy or a girl ?	BOY/ GIRL
3. Would you prefer to have a few very close girlfriends or lots of girlfriends (no special ones) ?	FEW/ LOTS
4. Are you more like your mother or father in personality ?	MOTHER/ FATHER
5. How many friends would you say you had ?	LESS THAN 2/ 2-5/ 5+/ DOZENS
6. In your experience would you say boys tended to have more friends than girls or less ?	MORE/ LESS
7. If you are left alone at home what do you usually do (a) ring up some mates and ask them to come round (b) turn on the TV or play records (c) go out yourself (d) go to bed ?	a/ b / c / d
8. Whom would you say you thought about most before you made an important decision (a) mother (b) father (c) boyfriend (d) sister/brother (e) girlfriends (f) yourself ?	a/ b/ c/ d/ e/ f
9. Would you say boys have a better time (more chances, more freedom) than girls ?	YES/ NO
10. If one of your parents invites someone you don't know round home, how do you usually feel (a) shy or embarassed (b) pleased (c) don't stick around ?	a/ b / c

This is your girlfriend. Draw in where you'd stand.



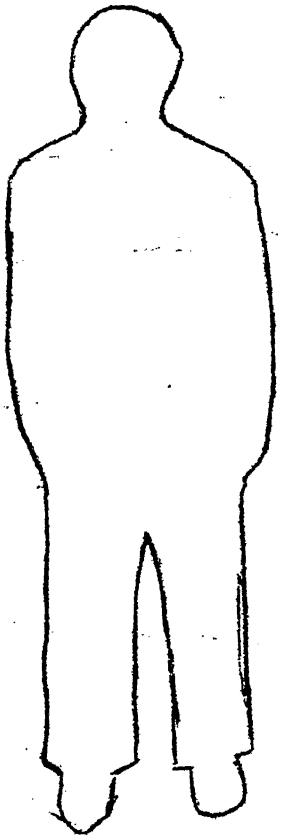
528 A small child you're looking after. Where would you stand?

You need to ask the time, so you go up to this stranger. Draw yourself.

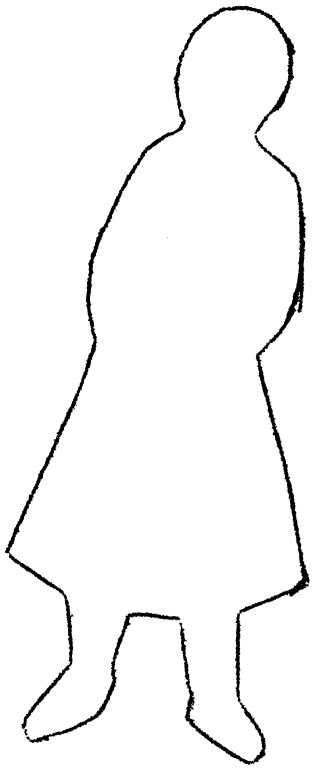


530

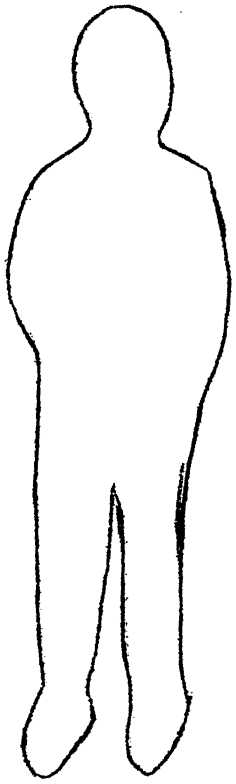
Someone you admire very much. Draw in yourself.



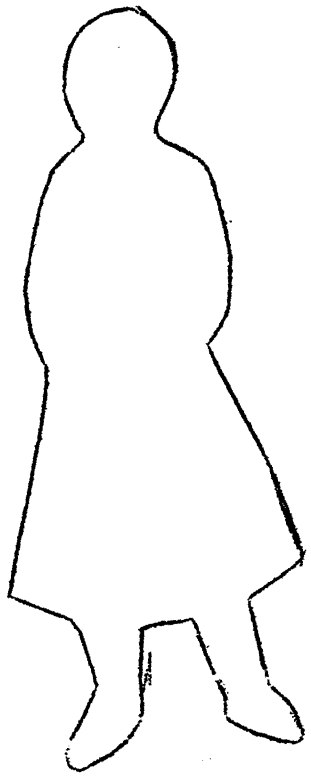
An adult you dislike. Draw in yourself.



Your boyfriend. Draw in yourself.



A housemistress you get on well with. Draw in yourself.



RESPONSES OF EUROPEAN ADOLESCENTS TO SCHEMATA MEASURES
(Distance from figures given in centimeters)

SUBJECT	M1	M2	M3	M4	M5	M6	M7
1 Be	0	0.25	1.5	0	19	0	1
2 Kr	2	0.75	3.25	1.75	12	1	1.5
3 Lo	2.5	1.25	4	2	4	1	1.5
4 Ly	2.75	1.25	4.75	3.25	9.25	0.75	1.25
5 Rh	2.5	1.5	2.5	2	10	1	1
6 Sha	1.5	0	2.25	0.75	19.5	0.5	1
7 Te	2.25	0.5	2	1	8.5	0.75	2.5
16 Da	0.5	0	3.5	Beh	9.5	0	3
17 Di	3.5	0.75	2.5	2.25	21.25	0.5	2
18 Je	3.25	1.75	3.75	2.5	6.25	0.5	2
19 Jo	n.a.	4	21.5	1.5	21.5	1	1.5
20 Pe	2.5	1	1.5	1	15	1	3
21 Ru	2.75	2.5	0	1.25	12	0.75	3.5
22 She	2.5	1.25	3	1	5	1.5	2.5
23 Dia	2	0.75	1.75	4.5	9.25	1.5	1.5
24 Shir	2.5	1	1.5	1.5	10	4.5	1.25
25 Car	2.25	0	n.a.	1.5	6	0.5	2.25
42 We	2.25	0.75	5.5	5.5	15.5	2.5	2.75
$\bar{X}$	2.22	1.08	3.69	1.92	12.09	1.09	1.93
s	0.85	0.95	4.64	1.34	5.50	1.01	0.76

RESPONSES OF PART-MAORI GIRLS TO SCHEMATA MEASURES

(Distance from figures given in centimeters)

SUBJECT	M1	M2	M3	M4	M5	M6	M7
9 De	1.75	1.5	0	n.a.	n.a.	n.a.	n.a.
26 Ju	2.5	0.75	2	2.5	12.5	2	1.5
27 Ro	1.5	0.75	3.25	1.5	2.25	0.75	0.75
28 Tay	2.5	1	3	7.5	19.5	22	14
29 Tes	4.5	1.25	4.5	5.75	3.5	0.75	2.75
30 Mar	2	1	4	3	12.5	1	2.25
$\bar{X}$	2.46	1.04	2.79	4.05	10.05	5.30	4.25
s	1.08	0.29	1.62	2.49	7.16	9.35	5.50

RESPONSES OF MAORI ADOLESCENTS TO SCHEMATA MEASURES

(Distance from figures given in centimeters)

SUBJECT	M1	M2	M3	M4	M5	M6	M7
10 Au	3	1.5	2.5	5	16	18	3
11 Ke	3.25	0.75	3	13.5	3.25	19.25	4.75
12 Ku	1.25	n.a.	18.5	2.5	19	n.a.	1.5
13 Ma	1	0.5	5.25	2	12	16.5	1.25
14 My	0.75	0	7.5	3.5	21.5	1.25	1.5
15 Tan	2	1.25	1.75	15.75	20.25	20.25	18.5
31 An	4	6.5	11	13	20	16.5	11
32 Ber	4.25	1.25	n.a.	1	8.25	0.75	0.75
33 Ca	18.75	1.5	5.75	3.5	1.5	7.75	3.25
34 Do	2.5	0.75	4.5	1	17	0	1.5
35 Hi	1.75	1	2.75	2	9.5	3.25	1.5
36 Ka	1.75	1	4.5	6.25	10	4	2
37 Mi	2	1	2	2	5.25	1	0.75
38 Sa	1.5	1.5	3	2.25	3.25	1	2
39 San	1.5	0.75	0.5	1.25	12.5	1.25	0.75
40 Tau	16.5	4	4.75	7	14	n.a.	14
41 Vi	3.25	1.5	1.5	1.5	6	0.75	0.75
$\bar{X}$	4.06	1.55	4.93	4.88	11.72	7.43	4.04
s	5.22	1.57	4.45	4.75	6.54	8.08	5.27

EUROPEAN GIRLS' RESPONSE IN SCHEMATA TASKS - TEST/RETEST

SUBJECT	M1 T1	M1 T2	M2 T1	M2 T2	M3 T1	M3 T2	M4 T1	M4 T2	M5 T1	M5 T2	M6 T1	M6 T2	M7 T1	M7 T2
1Be	0	2	0.25	0.25	1.5	3	0	1	19	20	0	0	1	0.5
2Kr	2	12	0.75	1	3.25	2.5	1.75	2	12	6	1	1	1.5	1.25
3Lo	2	2.5	1.25	1	4	3.75	2	2.25	4	2.5	1	n.a.	1.5	1.5
4Ly	2.75	3.5	1.25	1	4.75	4.5	3.25	3.25	9.25	9	0.75	n.a.	1.25	2
6Sha	1.25	1.5	0	1.25	2.25	3	0.75	1.25	19.5	18	0.5	1	1	1.25
7Te	2	2.25	0.5	1	2	5	1	1.5	8.5	8.5	0.75	n.a.	2.5	n.a.
8Tr	1.5	2.5	1.25	1.75	1.75	3.25	1.25	7.5	16.25	19.5	1.5	3	1.75	2.25
16Da	0.5	2.75	0	0	3.5	5.5	Behind	Behind	9.5	7.75	0	1	3	1
18Je	3.25	3.5	1.75	1	3.75	3	2.5	2.5	6.25	4.5	0.5	5/7.25	2	2
19Jo	n.a.	0	4	1.25	21.5	7.5	1.5	0	21.5	22.5	1	0	1.5	1.5
20Pe	2.5	2.75	1	1	1.5	4	1	1	15	18.5	1	2	3	5.5
22She	2.5	3.5	1.25	1	3	4	1	3	5	5.5	1.5	3.5	2.5	2.5
24Shir	2.5	1.5	1	0.75	1.5	1.5	1.5	0.75	10	3	4.5	0.25	1.25	0.5
$\bar{X}$	1.90	3.10	1.10	0.94	4.17	3.88	1.46	2.17	11.98	11.17	1.08	1.90	1.83	1.81
s	0.94	2.85	1.02	0.43	5.32	1.52	0.85	1.93	5.76	7.33	1.13	2.23	0.71	1.32
r	0.16		0.43		0.75		0.21		0.92		-0.14		0.62	
t	0.51 n.s.		1.58 n.s.		3.76 signif. .01		0.14 n.s.		7.79 signif. .01		-0.4 n.s.		2.50 signif. .05	
p	0.50 n.s.		0.51 signif. .05		0.47 n.s.		0.37 n.s.		0.76 signif. .01		0.22 n.s.		0.59 signif. .05	

MAORI GIRLS' RESPONSE IN SCHEMATA TASKS - TEST/RETEST

SUBJECT	M1 T1	M1 T2	M2 T1	M2 T2	M3 T1	M3 T2	M4 T1	M4 T2	M5 T1	M5 T2	M6 T1	M6 T2	M7 T1	M7 T2
11Ke	3.25	4.25	0.75	1.25	3	4	13.5	5	3.25	5	19.25	4.75	4.75	3
12Ku	1.25	2	n.a.	7.25	18.5	4	2.5	1.75	19	12.5	n.a.	n.a.	1.5	2
14My	0.75	4.75	0	0.5	7.5	1.5	3.5	2	21.5	21.5	1.25	0.5	1.5	20
15Tan	2	3	1.25	1.75	1.75	15.5	15.75	18.5	20.25	13.75	20.25	20	18.5	18.25
31An	4	2	6.5	1.75	11	3.5	13	10.25	20	11	16.5	18.5	11	3.25
32Ber	4.25	2	1.25	1	n.a.	3.25	1	n.a.	8.25	9	0.75	n.a.	0.75	1
33Ca	18.75	6.5	1.5	1.25	5.75	5.75	3.5	7.75	1.5	4	7.75	8.5	3.25	3.5
34Do	2.5	2.5	0.75	0.75	4.5	3.5	1	2.5	17	20	0	0.25	1.5	1.75
35Hi	1.75	3.25	1	1.5	2.75	4	2	6.5	9.5	10.5	3.25	3	1.5	3.5
36Ka	1.75	1.5	1	1	4.5	6	6.25	4	10	10	4	2	2	1.5
38Sa	1.5	1.5	1.5	1.25	3	2.5	2.25	2	3.25	2.5	1	1.5	2	n.a.
39San	1.5	2	0.75	1.5	0.5	1.25	1.25	1	12.5	18	1	1.5	0.75	0.5
40Tau	16.5	5.5	4	1.5	4.75	4.25	7	n.a.	14	18	n.a.	n.a.	14	7
41Vi	3.25	4	1.5	1	1.5	2.25	1.5	1.5	6	n.a.	0.75	n.a.	0.75	2
$\bar{X}$	4.50	3.20	1.67	1.66	5.31	4.38	5.29	5.23	11.86	11.98	6.31	6.05	4.55	5.38
s	5.67	1.58	1.72	1.65	4.83	3.48	5.13	5.07	6.93	6.12	7.78	7.37	5.69	6.31
r	0.74		0.57		-0.13		0.78		0.78		0.82		0.50	
t	3.81 signif. .01		2.30 signif. .05		-0.43 n.s.		3.94 signif. .01		4.13 signif. .01		4.05 signif. .01		1.92 signif. .10	
ρ	0.42 n.s.		0.50 signif. .05		0.18 n.s.		0.68 signif. .05		0.83 signif. .01		0.92 signif. .01		0.64 signif. .05	

TABLE A

Subject	Age/Race	Number of children in the family	Moves in lifetime	Used to shared bedroom	Preference for separate or shared bedroom
1Be	14E	8	2	YES	SHARED
2Kr	14E	8	5+	YES	SEPARATE
3Lo	14E	4	3+	YES	SEPARATE
4Ly	14E	4	19	NO	SEPARATE
5Rh	14E	2	2	YES	SEPARATE
6Sha	14E	3	7	YES	SEPARATE
7Te	14E	6	3	YES	SEPARATE
8Tr	14E	6	1	YES	SHARED
9De	14PM	4+2HS	?	YES	SHARED
10Au	14M	12	?	YES	?
11Ke	14M	10	2	YES	SHARED
12Ku	14M	6	5	YES	SHARED
13Ma	14M	6	16	YES	SHARED
14My	14M	4+3HS	3	NO	SEPARATE
15Tan	14M	7	4	YES	SEPARATE
16Da	15E	4	4	YES	SEPARATE
17Di	15E	5+1HS	LOTS	YES	SEPARATE
18Je	15E	3	13	YES	SEPARATE
19Jo	15E	5	8	YES	SEPARATE
20Pe	15E	13	0	YES	SEPARATE
21Ru	15E	2+2HS	2	YES	?
22She	15E	3	3	YES	SHARED
23Dia	16E	4	5	YES	SEPARATE
24Shir	16E	3	2	NO	EITHER
25Car	15⅛M	2	?	NO	SEPARATE
26Ju	15PM	1+1HS	0	YES	SHARED
27Ro	15PM	5	0	YES	SHARED
28Tay	15PM	2+1HS	0	YES	SHARED
29Tes	15PM	5	2	YES	SEPARATE
30Mar	16PM	4	0	YES	SHARED
31An	15M	5	3+	YES	SEPARATE
32Ber	15M	8+1HS	0	YES	SHARED
33Ca	15M	7	5	YES	SEPARATE
34Do	15M	4	0	NO	SEPARATE
35Hi	15M	2	6	YES	SEPARATE
36Ka	15M	5	4	NO	SEPARATE
37Mi	15M	14	0	YES	SHARED
38Sa	15M	8	?	YES	SEPARATE
39San	15M	2+?HS	9	YES	SHARED
40Tau	15M	4+1HS	3	YES	EITHER
41Vi	15M	3	2	YES	SEPARATE

TABLE B

Subject	Seating choice (with peer)	Favourite place	IQ	Parents' marital situation
1Be	BES./OPP.	NO	OTIS 104	TOGETHER
2Kr	-	YES - music room	OTIS 101/ WISC 86-96	TOGETHER
3Lo	BESIDE	YES - chair	Above av.	MOTHER DEAD
4Ly	BESIDE	YES - weeping willow tree	Above av.	DIVORCED
5Rh	BESIDE	NO	Est. below average	ADOPTED
6Sha	-	NO	Above av.	DIVORCED
7Te	OPPOSITE	NO	WISC 83-93	DIVORCED
8Tr	BESIDE	YES - the field	Above av.	DIVORCED
9De	-	NO	Est. below average	DIVORCED
10Au	OPPOSITE	NO	Est. av.	TOGETHER
11Ke	BESIDE	YES - room in condemned unit	86;queried	TOGETHER
12Ku	BESIDE	NO	Average	TOGETHER
13Ma	BESIDE	NO	Est. above average	SEPARATED
14My	DIAG./BES.	NO	WISC 84-94/ RAVEN above av.112-122	DIVORCED
15Tan	BESIDE	YES	WISC 123/ RAVEN av.	DIVORCED
16Da	(Assistant)	YES - the field 'to be alone'	Est. av.	DIVORCED
17Di	-	YES - home unit	93-103/ 70-80	DIVORCED
18Je	-	-	Bright av.	DIVORCED
19Jo	BESIDE	YES - the field	Above av.	DIVORCED
20Pe	BESIDE	NO	Average	TOGETHER
21Ru	OPP./DIAG.	YES - sitting room in home unit	Est. av.	DIVORCED/ ADOPTED
22Sho	BES./OPP./ DIAG.	NO	80-90	TOGETHER
23Dia	-	YES - a place in the grounds	Above av.	DIVORCED
24Shir	OPPOSITE	NO	Est. av.	TOGETHER
25Car	BESIDE	YES	Bright av.	ADOPTED
26Ju	BESIDE	NO	OTIS 68-78	ADOPTED
27Ro	BESIDE	YES - under willow by home unit	Above av.	TOGETHER
28Tay	OPPOSITE	NO	Est. av.	FATHER DEAD
29Tes	BESIDE	NO	Perf.85-95 Verb.58-68	DIVORCED
30Mar	BESIDE	NO	112/110	TOGETHER
31An	BESIDE	NO	Est. av.	FATHER DEAD
32Ber	BESIDE	YES - several	Est. av.	DIVORCED
33Ca	BESIDE	YES - a place in the grounds	Above av.	TOGETHER
34Do	(Assistant)	YES - my bedroom in the flat	Est. av.	ADOPTED
35Hi	BES./OTHER	YES - chair	OTIS 92	ADOPTED
36Ka	OPP./DIAG.	YES - lounge in home unit	Average	ADOPTED
37Mi	BESIDE	NO	Est. av.	TOGETHER
38Sa	BESIDE	NO	Est. av.	TOGETHER
39San	BESIDE	YES - home unit dining room	Est. av.	ADOPTED
40Tau	BES./OPP.	YES - chair	Average	DIVORCED
41Vi	BESIDE	NO	Est. below av.	ADOPTED
42We	(Assistant)	-	Above av.	DIVORCED

TABLE C

Subject	Rather have been born	Parent resembles most	Self image score*	Relationship with father	Relationship with mother
1Be	GIRL	MOTHER	-2	-	ambiv.
2Kr	GIRL	NEITHER	0	+	+
3Lo	GIRL	MOTHER	-4	?	?
4Ly	GIRL	FATHER	-2	+	-
5Rh	-	-	-4	?	+
6Sha	GIRL	FATHER	-2	-	-
7Te	GIRL	MOTHER	-4	-aggr.	-
8Tr	BOY	FATHER	0	ambiv.	+
9De	-	-	?	?	?
10Au	-	-	-2	+	+
11Ke	-	-	+2	+	+
12Ku	BOY	FATHER	-2	+	-
13Ma	-	-	0	+	-
14My	BOY	MOTHER	0	-	-
15Tan	BOY	MOTHER	0	-aggr.	-
16Da	-	-	-4	-	+
17Di	-	-	0	+	ambiv.
18Je	BOY	MOTHER	-4	+	ambiv.
19Jo	GIRL	FATHER	-4	+	ambiv.
20Pe	GIRL	MOTHER	0	?	-
21Ru	-	-	-4	-	-
22She	GIRL	MOTHER	0	+	+
23Dia	-	-	0	-aggr.	-
24Shir	GIRL	MOTHER	0	?	-
25Car	-	-	-4	+	+
26Ju	-	-	-2	N/A	+
27Ro	BOY	BOTH	-4	+	-
28Tay	-	-	+2	+	-
29Tes	BOY	MOTHER	0	+	+
30Mar	BOY	NEITHER	0	+	+
31An	BOY	?	+2	N/A	-
32Ber	BOY	?	0	-	-
33Ca	?	?	+2	-	ambiv.
34Do	GIRL	?	-2	ambiv.	-
35Hi	BOY	FATHER	-4	-aggr.	+
36Ka	BOY	FATHER	+4	+	+
37Mi	-	-	0	+	+
38Sa	BOY	FATHER	0	+	+
39San	BOY	FATHER	-4	-	+
40Tau	?	?	+2	+	+
41Vi	BOY	MOTHER	0	+	+
42We	Girl	FATHER	-	n.a.	n.a.

TABLE D

Subject	Rejects tactile interaction when	Response to boyfriend's touch	Response to being touched by stranger	Approach willingness: old person	child
1Be	in bad mood	ambiv.	- flight/ verb.aggr.	-	+
2Kr	in bad mood	n.a.	+	-	+
3Lo	upset	+	ambiv.passive	+	+
4Ly	upset,homesick	+	ambiv.	+	+
5Rh	in bad mood	+	- flight	?	-
6Sha	don't know	+	ambiv.verbal inquiry	-	+
7Te	when not looking at other person	+	- flight	+	+
8Fr	annoyed	-	- flight	+	+
9De	?	n.a.	n.a.	+	n.a.
10Au	when I go out with them	-	n.a.	n.a.	+
11Ke	in bad mood	-	- aggr.	-	+
12Ku	angry	-	- passive	+	-
13Ma	angry	-	verbal inquiry	+	+
14My	unhappy	?	verbal inquiry	-	-
15Tan	angry	n.a.	ambiv. passive	+	+
16Da	asleep/in bad mood	+	- aggr.	+	-
17Di	annoyed	+	- verbal rejection	+	+
18Je	mad	+	- passive	+	+
19Jo	angry	n.a.	- flight	-	+
20Pe	wild	+	- passive	+	+
21Ru	annoyed	+	ambiv.	+	+
22She	upset	+	verbal inquiry	+	+
23Dia	angry	-	- aggr.	+	n.a.
24Shir	in bad mood	+	- verbal rejection	+	+
25Car	except when upset	n.a.	- passive	+	+
26Ju	in bad mood	-	verbal inquiry	-	+
27Ro	in bad mood	+	- passive	+	+
28Tay	angry,lonely,sad	-	- flight	-	-
29Tes	asleep	n.a.	+	+	+
30Mar	loose temper	+	- passive	-	+
31An	in bad mood	+	ambiv.	-	-
32Ber	in bad mood	+	verbal inquiry	-	-
33Ca	it's not necessary	-	- active	+	+
34Do	in bad mood	+	ambiv.passive	+	+
35Hi	in bad mood	n.a.	+	+	+
36Ka	wild,angry	ambiv.	- flight	-	-
37Mi	don't know	n.a.	- verb.aggr.	n.a.	n.a.
38Sa	in bad mood	+	ambiv.	ambiv.	-
39San	I'm caught	+	- passive	+	+
40Tau	in bad mood	-	- verbal rejection	-	+
41Vi	in very bad mood	+	- flight	+	+

TABLE E

PSYCHOLOGICAL ASSESSMENT AND OTHER RELATED DATA (from school reports and social workers' observations).

1Be - contact problems; passive, reserved → withdrawn.
2Kr - psychopathic features - lack of contact with reality, serious criminal offences.
3Lo - out of control - guilt feelings about mother's death.
4Ly - strongly denied dependency needs, promiscuous, truanting.
5Rh - difficulties in coping with adoption, truanting.
6Sha - psychopathic features - depressed → suicidal, low frustration tolerance.
7Te - sexually promiscuous; poor contact with peers, prone to inducing scapegoating.
8Tr - sexually assaulted as child - very disturbed relationship with opposite sex- rudimentary super-ego development.
9De - adolescent schizophrenic? depressed, sharp mood swings, violent outbursts.
10Au - temper outbursts, epileptoid basis?
11Ke - mixed with anti-social peer group, truanting, overdosed once.
12Ku - immature, pseudo-retarded, school phobic, depressed, schizoid tendencies.
13Ma - paranoic tendencies in childhood, sharp mood swings, temper outbursts, depressed.
14My - distrustful "hates everybody", anti-Pakeha feelings?
15Tan - schizoid tendencies? aggressive to younger children.
16Da - guilt feelings towards mother, promiscuous.
17Di - depressed, restless, self-destructive gestures.
18Je - "neurotically disturbed", manipulative, serious criminal offences.
19Jo - "scapegoat" for mother, reacts against authority, poor contact with peers.
20Pe - attention-seeking, moody, anti-police, school phobic.
21Ru - epileptic, poor contact with peers, promiscuos.
22She - "little idea of acceptable social rules", depressed, contact difficulties with peers, passive, submissive.
23Dia - neurotic, suicidal in depressive phases.
24Shir- involved with gangs, unsettled after move to urban area.
25Car - "seriously socially maladjusted", reversal of mother and daughter roles.
26Ju - lonely, immature, high anxiety level, hysterical outbursts.
27Ro - promiscuous, drug involvement, truanting.
28Tay - out of control after father's death.
29Tes - school problems, some criminal offences.
30Mar - sharp mood swings, low self-esteem, poor impulse control.
31An - involved with gang, truanting, aggressive behaviour.
32Ber - compulsive thieving, conflict with step-father.
33Ca - involved with anti-social peer group, criminal activities.
34Do - promiscuous, out of control of adoptive parents.
35Hi - agitated-type depressive, aggressive.
36Ka - school difficulties (assaults on other pupils), in anti-social group of peers.
37Mi - epileptic.
38Sa - reserved → withdrawn, schizoid tendencies.
39San - restless (also homeless), depressed.
40Tau - schizoid tendencies, some contact difficulties with peers.
41Vi - temper tantrums, hysterical outbursts.
42We - truanting, torn between parents.